The Builder.

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Standardised Rolled Sections.

SINCE the Engineering Standards Committee commenced their labours in June, 1901, an immense amount of work has been performed, the first practical evidences of which are to be found in the preliminary lists of rolled steel sections issued last week. By the abolition of meaningless variations, such as those which have hitherto existed in this country, it is estimated that some millions of pounds will be saved annually, and in structural steel alone the annual benefit to makers and users will probably be equivalent to about three-quarters of a million. The nine lists now published in pamphlet form are intended for the information of rolling mill proprietors, to enable them to make necessary preparations for carrying into effect the new standards. Practically every form of steel section rolled for the use of shipbuilders and constructional engineers is included. There are sixteen sections of equal angle-bars, varying from 1 in. by 1 in. to 8 in. by 8 in., and thirty sections of unequal angles, from 1¼ in. by 1 in. to 10 in. by 4 in. Bulb-angles, bulb-tees, and bulb-plates are all used more or less extensively in shipbuilding, and of these an adequate number of standard sections is now established. Channels, used very largely in ship and railway waggon building, as well as in bridge and other work of structural nature, are well represented on the list by twenty-seven standards, ranging from 3 in. by 1½ in. by 1½ in., to 15 in. by 4 in. by 4 in. Eight sections, from 3 in. by 2½ in. by 3 in., to 10 in. by 3½ in by 3½ in., are specified for Z-bars, this form being chiefly used in shipbuilding, but it really ought to be widely employed in building construction, for it has undeniably advantageous features, and is a most economical section for adoption in built-up stanchions and columns. Twenty-two standard sections are provided for T-bars, from 1 in. to 7 in. The most important rolled section in the book of standards is that generally known as the H-beam, or rolled steel joist, the thirty-six sizes given varying from 3 in. by 1½ in. to 24 in. by 7½ in. It may here be remarked that the word "beam" is to some extent a misnomer, for several of the sections are more suitable for use as struts or columns than as beams.

The selection afforded is ample for all reasonable requirements, and its adoption will be attended with much saving of time, without in any way interfering with the proper design of steel work. Each of the lists to which reference has been made, contains a drawing showing the exact profile of the section dealt with, the radii of curves, and the points at which thickness is to be measured. Maximum, mean, and minimum thicknesses are standardised for each size of section, so that the numbers of the standards stated above may really be multiplied by three to give the correct total. Further, as variations of thickness can readily be obtained by adjustment of the "rolls," it will always be possible for architects and engineers to specify a special thickness whenever this may be thought necessary; though of course this will mean special rolling and consequent delay. At the present time, the section books of manufacturers are crowded with unnecessary sections, rarely kept in stock. Purchasers do not know this, and in selecting such sections they innocently cause delays in delivery, because manufacturers cannot afford to roll a few feet of various beams or bars at a time. When orders come in for out-of-the-way sections, they are allowed to accumulate until the total quantity is sufficient to justify the cost of a special rolling. Purchasers then wonder why it takes three or four months to get delivery, and are apt to say hard things about British manufacturing enterprise. This sort of trouble will be put an end to when the new standards are generally recognised, for all the makers will then keep standard sections in stock ready for immediate delivery.

We are informed that some of the largest steel manufacturers in the country have already decided to roll none but standard sections. In due course this example will be followed by others, especially as it is the intention of Government departments to enforce the standards now settled. The ultimate result will clearly be an immense benefit to the country at large, and the unfortunate circumstances which have led to the placing of Government and other orders abroad will no longer exist. Further lists will shortly be issued by the Engineering Standards Committee, giving the moments of inertia and other details relative to this issue of standard sections.

The present publication represents a part of the work done by the Committee on Sections Used in Shipbuilding, under the presidency of Mr. A. Denny, and the Committee on Bridges and Building Construction, under the presidency of Sir Benjamin Baker. Other departmental Committees are devoted to tests for ship and boiler steel, railway and tramway rails, railway rolling stock underframes, locomotives, and electrical plant. Including the main Committee, departmental Committees, and sub-committees, there are twenty-three organisations devoted to the standardisation of engineering work, and these include the most eminent men connected with the iron and steel industries of the country, as well as fourteen representatives of Government departments. A large sum of money, provided by various engineering institutions, has already been spent, and we learn that the movement will shortly be supported by financial aid from the Government. Such support is clearly desirable, for the work in progress is of national and Imperial importance.

REMAINS OF A PRE-CONQUEST CHURCH AT NORTH ELMHAM IN NORFOLK.

A LARGE earthwork lies a little northward of the parish church at North Elmham. It is placed on rising ground, and commands the valley of the Wensum, and also the intersection of two ancient roads. The "work" consists of a deep, wide ditch surrounding a raised platform, or base-court, and a flat-topped circular mound which rises within the north-west angle of the base-court. Including the ditch, or fosse, the dimensions are 458 ft. by 396 ft., the direction of

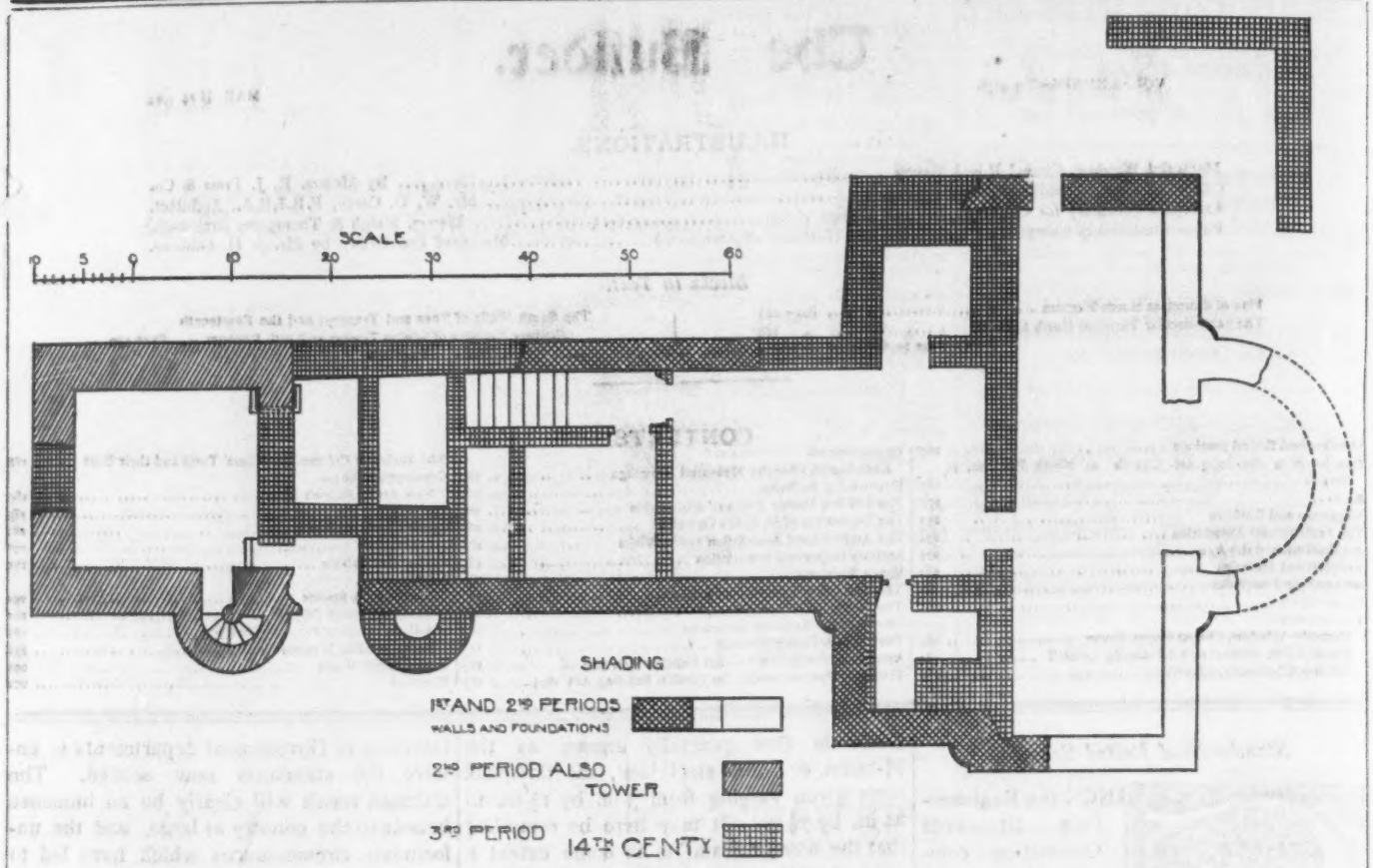

Fig. 1.—Plan of Church at North Elmham.

greatest length being a little south of due east and west. The fosse is most perfectly preserved on the east and north sides; its scarp and counter-scarp are steep, and the depth is 24 ft. below the level of the base-court; its width at the east is 69 ft., and at the north 88 ft. At the west and south the ditch can yet be traced, although the depth and outline are obscured. The inner platform, or base-court, forms an irregular parallelogram with rounded angles. It measures 320 ft. from east to west, and 240 ft. from north to south. The contents of the ditch have been thrown up, so as to raise the base-court about 5 ft. higher than the natural level. There is no trace of a bank or wall on its margin. To the east and north there are entrances across the fosse, the former probably original. The circular mound rises about 10 ft. above the base-court level, and is 34 ft. higher than the depth of the ditch which bounds its outer margin. The mound has lost some of its original height. It probably once carried a stockade, or a wooden tower.

Most of the area of the base-court retains its original level, but at a period later than its construction, a portion on its southern margin, about 120 ft. by 200 ft. was dug out to the original ground level 5 ft. below. On this lower level are the ruined walls and towers known as "The Bishop's Palace." In more recent centuries, fallen walls and accumulated earth had almost filled the hollow and buried nearly all but the upper parts of the towers. In 1891, the Rev. Augustus G. Legge, the then Vicar of Elmham, removed the débris of centuries down to the old natural level, and to him is due the recovery of a most interesting page in the past history of Norfolk.

Standing on the higher base-court level, you look down upon the ancient massive outer walls. Eastward there are two square towers, and southward two semi-circular turrets project beyond the line of walling. Within, the building is much divided by narrow partition walls. A careful examination shows that the ruins bear evidence of at least three periods of construction.

To the first period belong the larger portion of the lower courses of the massive walls to the north and south, and also the lines of foundation that clearly show the original eastern termination. The original west wall no longer exists, the square chamber at the west end being a later addition. The walls and foundations of the first period, when measured and planned, revealed the remains of a large church of basilican type, having a long nave, a wide transept, and an eastern apse. The walls are 3 ft. 2 in. thick, and are composed of rough-hewn ashlar, locally known as "Carr-stone," of a rich, deep brown colour. This stone is a ferruginous sandstone, and is found in the Hillington Hills and elsewhere in Norfolk. Evidence of its use in Saxon times may be seen at Holt Church, also in Norfolk, where the north-west quoin of the nave is formed of large blocks of this stone, and affords a good example of long-and-short work. The south walls of the nave and transept are the most perfect. A slightly projecting low course at their bases forms a rudimentary plinth. The lower courses to a height of from 3 ft. to 5 ft. are regularly built, the "Carr-stone" is dark in colour, and of close texture; but higher up the walls are less carefully formed, and appear to contain re-used stones. This is especially noticeable at the south-west angle of the transept. At this point, to the height of 4 ft., the "Carr-stone" is compact in texture, and the courses regular in construction; but above 4 ft. the stones are less carefully formed, the courses irregular, and probably retain much re-used material. The better ashlar and construction is all within 5 ft. of the base, but some of the inferior upper courses rise to the height of 6 ft. 6 in. The north wall of the nave is less perfect. Midway, a length of 24 ft. has been replaced by later flint-and-rubble work. What remains of the earlier wall bears evidence of two periods of construction. The transept is of comparatively large proportions. A little of the north and about 21 ft. of the south wall remain. The latter projects eastward 3 ft. 6 in. beyond the line of the square towers, and is of two periods. The foundations only remain of the east wall of the transept. Of the apse little survives—the eastern portion is gone, but a few feet of the springings of the curve at its north and south ends indicate the extent of its sweep.

The lower courses of the nave and transept walls are below the level of the base-court of the earthwork, and earlier than its construction, and were once buried in it. The inferior upper courses rise in part above the level of the camp, and are later than its formation. To the church of the first period belong the lower courses of the "Carr-stone" walls and the foundations eastward. They are the remains of a church that was destroyed, and its ruins buried in the camp.

A quarter-round pilaster buttress of unusual form is set in the re-entering angles of the nave and transept walls on the south, on the line of the south wall of the transept, and also at the angles to north and south of the apse (see plan, fig. 1).

To the second period may be assigned the upper courses of the nave and transept walls, characterised by inferior construction and re-used stones. These courses are about 6 ft. 6 in. above the ground; they are higher than the base-court level, were not buried in the earthwork, and are of a later date than the first period. At the west end there is a square chamber, with walls remaining to an average height of 7 ft. There are re-used stones in the construction. The north and south walls are 4 ft. 6 in. thick, 15 in. thicker than those of the nave and transept.

Fig. 2.—The Semi-circular Turret at North Elmham.

Fig. 3.—The South Walls of Nave and Transept and the Fourteenth-Century Remains of Square Towers at North Elmham.

An entrance, now blocked up, is in the west wall. At the south-east angle, the lower portion of a semi-circular turret, 10 ft. high projects outwards. The existing east-return wall encloses at the north end a base or plinth, and resting upon it a portion of the respond of an arch which formerly opened into the nave. This base and respond are not of "Carr-stone," and are therefore of a period later than the first church; they are not of the fourteenth century, as a wall, probably of that date, has been built across the opening. The greater thickness of the walls, the stair turret, and the remains of the arch are indications of a tower. The evidence as a whole is in favour of the conclusion that a western tower was added at the re-construction, which marks a second period.

Work of a third period, at least, is present in the ruins. In this the character of the building is changed, and the construction is in "flint and rubble." Within the outer walls the space is much divided by flint and rubble walls, containing little or no "Carr stone." Most of these walls are only 1 ft. 8 in. thick. There are ruined stairs, landings, cellars, pits, &c. There are doors and openings with ashlar jambs, the latter probably of the Perpendicular period. A second semicircular turret was added to the east of the older one in the south wall. This turret is of rubble and flint, and between it and the earlier turret an entrance has been carried through the earlier walls at the same time. The original east end appears to have been destroyed, and in the third period the old line abandoned, and a new eastern termination formed about 18 ft. inwards. Here the remains of two square towers flank the north-east and south-east angles. Their height is about 17 ft., their lower courses partly include walls of the first and second periods; they are chiefly composed of rubble-and-flint work and of reused materials. About 15 ft. to the north-east of the northern tower there is an outwork, apparently for defence. It consists of two walls at right angles to one another, is formed of grout work, and faced with large flints.

The early remains show that the church at North Elmham possessed some features in common with some of the earliest Roman basilicas, with the earlier Church of St. Peter, and especially with the Church of St. Paul-without-the-Walls. (The first church was destroyed, and the present church built on the original foundations in the early part of last century.) The wide transept projected beyond the lines of the nave and its aisles. Its central nave, transept, and apse are closely followed in the proportions of the church at Elmham.

In England the Saxon church at Brixworth has an apse, transept, and tower with a stair-turret, and its size is about that of North Elmham.

Deerhurst Saxon church has a western tower, and a nave and transepts of widths near to those at Elmham; also an apsidal presbytery entered by a noble arch. Browne's plan of the pre-Conquest church at Yo shows an apse and a similar transept to that at Elmham. The stair-turret is not an unknown feature in Saxon churches: it occurs at Brixworth, Brigstock, Hough-on-the-Hill, and Broughton.

But the most interesting comparison is between North Elmham and Peterborough. Under the present Norman cathedral part of the lower walls remain of the church, or two successive Saxon churches, of Medeshamstede. The first of these dated from A.D. 654. The Danes under Edda destroyed it in A.D. 871. A second church was built on the site in 963. It was destroyed by fire in A.D. 1116, and a year afterwards the present Norman cathedral was begun. The Saxon walls remaining are of ashlar, and 2 ft. 6 in. thick. Of the nave nothing has been discovered. There is a large transept or transverse nave about 87 ft. wide by 34 ft. 8 in. deep, comparing with the 51 ft. 6 in. by 27 ft. 6 in. of the similar transept at North Elmham. The presbytery is 23 ft. 5 in. wide. Mr. J. T. Irvine* says: "The depth about 26 ft., and the termination probably square; re-used stones from a former church were seen present in the walls of both transepts"; and there was also found "a fine specimen of a long-stone from a vertical pilaster strip, and two pieces of jamb stones from the respond of an arch, like in section to those at Wittering." There are, however, some features that appear to have been hitherto overlooked. These are (1) a deflection inwards of the line of the north wall 3 ft. within the presbytery. This is possibly the beginning of the springing of the curve of an earlier presbytery, which was 14 ft. to 15 ft. deep, about the same depth as at North Elmham. (2) The north wall of the transept appears to be of two periods of construction. From the N.E. quoin, going westward for a distance of about 8 ft. 6 in., the courses are irregular, the ashlar small, and there are appearances of reused material; also on the outer face of the wall, about 15 in. within the angle, there is *in situ* what appears to be a double base for a vertical pilaster strip. The further portion of the wall, about 32 ft., running to the western angle, is of superior workmanship; its ashlar is large and regular.

This evidence appears to prove that there are portions remaining of the church of A.D. 963, and also of the earlier church of A.D. 654. To the church of 963 belong the remains of the chancel, the shorter section of the north wall of the transept, with its attached base for a pilaster strip, and also the long-stone and the two pieces of jamb stones found by Mr. Irvine. The shorter section of inferior work in the transept wall is an evidence in favour of a late period, as Late Saxon walls are usually inferior in construction to those of an earlier period. The reused stones point to a reconstruction. The pilaster strips are an indication of Late Saxon, and the jamb stones, "like in section to those at Wittering," are further evidence in the same direction, as Wittering is a Late Saxon church.

* "The Saxon Abbey Church of Peterborough," Journ. Brit. Arch. Assoc., vol. l., p. 45.

On the other hand, the indicated short apsidal presbytery, and the 32 ft. of walling of superior construction in the north transept, belong to an earlier period.

The first church at Medeshamstede was destroyed by the Danes in A.D. 871. Is it not probable that the foundations and parts of the lower walls would survive and be, at least partly, reused in the rebuilding on the same site in A.D. 963? The earlier masonry in the larger part of the north transept wall, and the evidence, slight as it is, of an earlier apse, add to the probability, if they do not clearly prove, that remains yet survive of the church of A.D. 654, as well as of that of A.D. 963. The indication of an apse projecting from the eastern line of the transept, and the major part of the north wall being of the earlier construction, show that the transept of the second church is part of the first church also—that the church of A.D. 654 had the wide transverse nave or transept and an apse, and was basilican in type. This view is strengthened by the plan of the basilican church at Brixworth, *c.* A.D. 680, which was an offshoot from Medeshamstede. Its transverse nave and apse suggest the probability of the same features having been also at Medeshamstede, the mother church of A.D. 654. Thus the basilican churches of Medesbamstede and Brixworth group with the basilican church at North Elmham, and suggest a similar date for the latter.

The recorded history of the East Anglian Sees is in agreement with that indicated by the remains on the site at North Elmham. About A.D. 630 Felix converted the East Angles to Christianity. He was bishop until 647, having his seat at Dunwich. After him there were three Bishops of Dunwich—Thomas, Beorhlyils, and Bisi. In 673 Bisi, aged and infirm, wished for rest, and the diocese was divided by Archbishop Theodore at the Synod of Hertford.

In reference to this division, John Richard Green says:—"Thus when in 673 he (Theodore) broke up the See of East Anglia, it was by dividing it into dioceses of the Northfolk and the Southfolk, whose prelates were established at Dunwich and Elmham."*

Dr. Stubbs also says:—"East Anglia was first divided between the Northern and Southern divisions of the folk, the former with its See at Elmham, the latter clinging to Dunwich."†

The newly-formed diocese of Elmham had ten bishops, from Beadwine in 673 to Humbeorht in 870, a period of 197 years.‡

In the year 870 the Danish army "rode over Mercia into East Anglia, and took winter quarters at Thetford; and in that winter King Eadmund fought against them, and the Danes gained the victory, and slew the king, and subdued all that land, and destroyed all the monasteries which they came to."§

History gives a line of bishops of North Elmham from 673 to 870, that obviously suggests a church there, dating from probably *c.* A.D. 700. The Danes "destroyed all the monasteries which they came to." Elmham, not far from Thetford, could not escape that destruction.

* "The Making of England," p. 343.

† Dr. A. Stubbs' "Constitutional History," chap. 8, p. 226.

‡ "Anglo-Saxon Bishops, Kings, and Nobles," by A. G. Searle (Cambridge University Press).

§ "Anglo-Saxon Chronicle," vol. ii. An. 870. Trans. by Benj. Thorpe.

What is the answer given by archæology to history? Earlier than the earthworks at North Elmham, there are massive "Carr-stone" walls, the remains of a large church of a very early type, a basilica worthy of the seat of the bishops of the Northfolk; a building grouping architecturally with Medeshamstede of A.D. 654, and Brixworth, of *c.* 680, and therefore probably dating about the end of the seventh century. There is also evidence of the almost total destruction of that early church. Its ground plan can be traced, and a few courses of its ancient walls remain. It was ruined and an earthwork raised over it. The latter cannot be Roman, for it covered and obliterated a Saxon church. The destruction of the earlier church was undoubtedly the act of the Danes about 870, and the earthwork in which it was buried was a Danish camp. The church proves the camp to be Danish. The Danish camp proves the church to be early Saxon. North Elmham, therefore still retains the ground plan and wall remains of an early Saxon church, and also a Danish camp with its ditch, raised base-court and flat-topped mound, almost certainly of about A.D. 870.

After A.D. 870 there are about seventy years of almost unbroken silence; there is little or no record. It appears that in 942 the dioceses of Dunwich and Elmham were re-united under the ancient title of the Bishopric of Elmham; Æthelwald is Bishop of Elmham in 945 or a little earlier; and fourteen Bishops succeed him, including Stigand, until we come to Herfast in 1070. Later, in 1075, whilst he was Bishop, the see was removed to Thetford, and in 1092 removed again to Norwich.

What is there on the site at North Elmham that may be attributed to the years between 942 and 1075? Part of the south wall of the transept remains. It projects eastward beyond the line of the fourteenth-century work. It is of two periods. Its lower courses are of the period of the first church, but the higher courses, rising up to 7 ft. from the base, appear to belong to a later reconstruction. These higher courses rise partly above the level of the earthwork, and therefore were not buried in it. The projection of the wall beyond the line of the square towers proves that it does not belong to the work of the fourteenth century, and also that the reconstructed second church was on the complete ground plan of the first church. The two periods are also most clearly marked at the south-west quoin of the transept, and also in the walls of the nave. For reasons previously given, the tower at the west, with its stair-turret, may be claimed as an addition belonging to the second church of the Late Saxon period.

History tells of a second line of Bishops of Elmham in the later Saxon times; the remains on the site at Elmham give evidence of a restored reconstructed later Saxon church. The choice of North Elmham was natural and politic, its position commanding; for 200 years it had been the home of the bishops of the Northfolk; its memories were sacred in Anglian hearts. In the tenth century Christianity had risen again—the years of Paganism past. The restoration of the bishopric of Elmham was a great symbolic act. Something more was required: the restoration of the bishopric was followed by the restoration of the church. The Danish camp remained a sad memorial of ruin and defeat, the tomb of martyrs, the grave-mound of a church; but the mound was opened, the walls of the early church recovered, and on the sacred site a noble church rises and dominates the camp, and so the triumph of Christianity over Paganism became symbolically perfected. The restored bishopric was removed from Elmham in 1075, the early Norman times. To the Norman, the Saxon bishopric and church made no appeal. The church fell into disuse and decay. Evidence of this is found in the parish church of North Elmham, a little distance south of the camp. In its chancel there are remains of early Norman work. High up in the south wall there is an early Norman window, and further along the wall, the traces of another. It is said that "Herbert de Losinga," the first bishop of Norwich, built or rebuilt the parish church of Elmham. Its chancel yet retains part of the work of Losinga, of the latter part of the eleventh century, and is a proof that the Saxon minster had ceased to be used as a church.

A silence of centuries ensued. Blomfield, in his "History of Norfolk," says, "In the eleventh year of Richard II. (1387), Henry Spencer, Bishop of Norwich, had a license to embattle and make a castle of his 'Manor House.'" He speaks of the "Tower Hills," but in earlier times it was known as "The Place."

What is there remaining in the ruins belonging to the earlier manor house, or to the later castle of the fourteenth century? there may be something that represents the manor house, that is all that may be said; but much in the ruins may be attributed to Bishop Spencer of 1387. The larger portion of the square towers, the out-work at the north-east, a section of the north wall of the nave, the turret without a stair, and a large portion of the inner dividing walls, all composed of rubble-and-flint work, may be claimed as probably of the fourteenth century, the last period of reconstruction.

B. T. R. C.

The writer wishes to acknowledge the very valuable assistance he has received from Mr. C. C. Hodges, of Hexham, in the preparation of this paper.

NOTES.

Local Indebtedness.

THE debate on the question whether a joint Select Committee of both Houses should be appointed to consider the principle which should govern the powers granted to municipalities and local authorities for industrial enterprise was strangely without feature, but it appears to us that any inquiry should now have a wider range and embrace the subject of local indebtedness generally. The total outstanding municipal debt has now attained something like 214,400,771*l.*, and it would seem that the local authorities have recourse to raising loans to carry out their extravagant policies because, were the rates raised in anything like due proportion to the increasing expenditure, the attention of the ratepayers would be drawn directly to this subject, and an effective opposition to this policy would then be organised. Seeing, however, that this enormous debt is nevertheless a direct charge on property, it behoves the ratepayers equally to be on their guard, and not by their apathy to allow a policy to be continued which sooner or later will be brought home to them by a

direct increase in rates already far too burdensome.

The Penrhyn Quarries Debate.

THE debate last week on the strike at the Penrhyn Quarries was an excellent illustration of what has often been said in these columns, that in these days it is not so much fresh legislation on social questions that is required as the enforcing of existing laws. The rights and the wrongs of the long-continued dispute between Lord Penrhyn and the workmen at the Welsh quarries, with its melancholy and indirect results, were scarcely discussed by the House of Commons, for the debate really turned upon the point whether the Board of Trade should have taken action under the provisions of the Arbitration Act of 1896, by which the Board could have appointed a conciliator, although one of the parties to the dispute did not agree to it. To the ordinary individual the present case appears to be essentially one in which the Board of Trade could have taken action, because it was not necessary that both parties should be in agreement, and it did not follow that because one was, at the time, unwilling to end the dispute, the efforts of a conciliator would therefore have been useless in result. Mr. Gerald Balfour's defence, that from his knowledge of Lord Penrhyn, the latter would not have allowed any decision of the Board of Trade to influence his conduct, was a mere supposition. It is obvious that if, when there are difficulties such as exist in the Penrhyn dispute, attempts are not to be made to put an end to them under the Act of 1896, it might just as well never have been passed.

Railway Co-operation.

AT the recent meeting of the London and North-Western Railway Co., when the subject of railway co-operation was under discussion, an excellent scheme was explained by the Directors as under consideration for the establishment, at such a centre as Carlisle, where systems of seven railway companies connect with each other, of a sort of railway clearing-house. The Board were led to favour the idea from the successful working of their own transhipment shed at Crewe, and it is obvious that such a scheme, if carried out, would effect economies to the companies themselves, and at the same time benefit the public by saving both time and expense in the carriage of goods. We trust, however, that we may soon see some such scheme of co-operation between the main trunk lines put into operation as regards their passenger traffic. Passengers at present desiring to pass from one system to the other nearly always find the time-tables so arranged that a long wait is necessary at the principal stations of junction, and hitherto the railway companies have appeared to fail to grasp the fact that through facilities would largely increase their passenger traffic, whilst involving no capital expenditure in the erection of sheds and warehouses, as must be the case where the goods traffic is concerned. Whilst we are in agreement with the statements made by the Chairman that competition has been of advantage to the public as a whole, we would emphasise the fact that it has only been so where two or more companies serve the same district, but that the dog-in-the-manger competition which at present exists in the form of obstruction to passing quickly and easily from one system to another is as disastrous to the interest of the companies as it is to that of the public at large.

Metropolitan Public Gardens Association.

THE twentieth annual Report of the Metropolitan Public Gardens Association draws special attention to the effort which has been made by the Association, and which has met with considerable success, to ensure a more certain carrying out of the provisions of the Disused Burial Grounds Act. It is stated that in several recent cases faculties have been granted by the Consistory Court for the building in churchyards of parish halls, vestries, and schools, under the plea that these erections formed enlargements of the churches, and were therefore exempt from the operations of the Act; and that this has led to a serious curtailment of certain of the valuable gardens laid out by the Association. The London County Council, however, has, at the request of the Association, taken up the matter very thoroughly, and has made some useful standing orders to ensure that in future cases of the kind the Council should be heard in opposition before any decision is given. The Association has also strongly opposed (and rightly) the proposal to turn the house on the Golder's Hill Estate into a hospital. As the Report truly observes, "The house in this and other cases is part and parcel of the open space, to be used and enjoyed by the public, equally with the ground. Moreover, it is manifest that in the case of a hospital a considerable area of the adjacent public space would also have to be appropriated for the use and recreation of the convalescents. Nor, if public spaces are once tampered with, is there any reason why only those with houses on them should be mutilated, nor why only a particular class of hospital, more than any other hospital, or, indeed, than any other good objects, should be favoured in this way. The Association has joined in a powerful deputation to the Parks Committee against the scheme."

An Architect's Case.

IN the case of the Columbus Co. *v.* Clowes, no new proposition of law appears to have been decided. Certain lessees of land employed an architect to prepare plans and specifications for a factory to be erected upon it. The plans were prepared and paid for, but subsequently the lessees of this land, becoming short of funds for the erection of the buildings, gave up the scheme and parted with their lease. After they had thus parted with their interest in the land, the lessees discovered that the plans and quantities were incorrect, in that they would not have made the building cover the whole site, and they then sued the architect for a return of the money paid for the plans, or for damages for negligence. In the result, the Court found that the architect had been negligent, as he ought to have measured the site and not to have acted on the information he did, but that there was no complete failure of consideration, since the plans were capable of easy adaptation to the site, and much work such as boring had been done which was of the same value as if the plans had been correct. The Court, however, held the defendants entitled to some damages, and proceeded to assess these at 40*l.*, the cost of adapting the quantities, and a nominal 2*l.* on the plans themselves. There is no question that an architect can be held liable for his negligence (Moneypenny *v.* Hartland, 1868), but we should have thought the plaintiffs must prove damages to entitle them to more than quite a nominal sum. The Judge expressly found that the plaintiffs had suffered no real damage, since they were never in a financial position to make use of the plans, and we fail to find any new principle laid down in this case, but it seems rather to be only an example of somewhat lucky litigation, from the plaintiffs' point of view.

Tenants and Electric Lighting Plant.

AN interesting question to life tenants of landed property was recently decided by the Court of Appeal in the case of Re Blagrave's Settled Estates. It was an application by the tenant for life for an allowance out of capital for the installation of electric light in the mansion house. The Court below had allowed the cost of the engine or dynamo house, but disallowed the cost of the electric-lighting plant, and it was upon the latter point that the appeal turned. The Court disallowed the appeal. Improvements which can be carried out with capital trust money are specifically enumerated in section 25 of the Settled Land Act, 1882, and the Court decided that the lighting plant could not be held to be "incident or necessary for securing the full benefit of" any works enumerated in this section, nor was it within section 13, sub-section 2 of the Settled Land Act, 1890 "an addition in a building proper to enable the same to be let," as that must be a structural addition. The case is of some importance as there were two divergent decisions in the Courts below with reference to electric lighting plant, but it is now settled that for such things or for heating apparatus the tenant for life cannot get a capital grant, and the majority of the Court of Appeal even intimated great doubt whether the dynamo house itself should have been allowed for.

Losses in Electric Supply.

THE paper on "Distribution Losses in Electric Supply Systems," which was read this week to the Institution of Electrical Engineers by Messrs. Constable and Fawssett, is interesting and instructive. The authors show that of the total electrical energy generated at the Croydon Electricity Works about 20 per cent. was lost in distribution. The greatest portion of this loss, which represents about 200,000 h.-p. hours per annum, was due to the transformers in the sub-stations. One curious fact brought out by their analysis is that the loss in actual heating in the type of meter employed is very considerable. This heating which goes on all the year round amounts to about 50,000 h.-p. hours per annum. The authors point out that this loss is quite an unnecessary one, and suggest that only ampere-hour meters should be used. We entirely agree with the suggestion. We think that the principle of making consumers pay for the power instead of the current is a wrong one. Suppose, for for example, that the declared pressure of supply is 240 volts, and that the actual pressure is 250 volts, then the consumer's lamps are overrun, their life is shortened, the blackening of the bulb is excessive, and yet he has to pay 4 per cent. more than if

he were supplied at the declared pressure which he naturally thinks is the pressure he gets. If, on the other hand, his pressure is too low, the light he gets is poor, and the 4 per cent. rebate on his bill is ludicrously out of proportion to the 20 or 30 per cent. loss of light due to low pressure. In the particular case, when arc lamps or motors are used on alternating current circuits, then possibly a watt-hour meter would be preferable. We understand that Croydon is changing from an alternating current system of supply to a direct current system. Messrs. Constable and Fawssett calculate that this would result in a saving of 8,800 units per annum. We think that this saving is very problematical, and think that it could easily be wiped out by the increased earth leakage currents which ensue with direct current supply.

Irish Carpet Exhibition, Grafton Gallery.

AN exhibition of carpets at a West End gallery is a somewhat unusual event, and, as the *Times* points out, only in a humorous sense can carpets be said to be beneath one's notice. These carpets are made in Donegal, and it is hoped that the present Exhibition may give an impetus to the industry that at present is only in a very small way at Donegal, and that it will eventually spread over the West of Ireland, where there is great need for some industry that will employ large numbers of peasants. The Irish carpets, like those of the East, are a hand production. "The mosaics of small woollen squares" (as William Morris calls them) are tied by the fingers in knots into longitudinal warps stretched between two beams. The carpets have the peculiar durability of construction attributed to Turkish and Persian rugs. The colouring and design are distinctly Western, the carpets at the present exhibition being from designs of well-known artists. In colouring and design there is none of the subtlety and mysticism of the East, where colour and design appear inseparable; on the other hand, the low tone of colour and Western design are more in character with the surroundings that a carpet in this country must help to adorn, and we think there should be a considerable and increasing demand for the Irish carpet on artistic grounds as well as patriotic ones. They are no more expensive than Turkey carpets, and one would suppose that with time the cost of manufacture would decrease. The industry is due to the exertions of Messrs. Morton, of Darrell; and Messrs. Liberty are the organisers of the exhibition.

Messrs. Lawrie's Gallery.

MESSRS. LAWRIE & Co. are exhibiting at their Gallery, 159, New Bond-street, a small but interesting collection of pictures by Dutch artists of the seventeenth century. Among these are a remarkable portrait of a boy reading by Frans Hals; a work apparently executed quickly and in a broad and sketchy style not usual with the artist, but a most effective work. Ruysdael, a painter in general much overrated in popular estimation, is seen perhaps at his best in "The Outskirts of a Forest," a picture showing a large mass of trees, with foreground figures by Nicolas Berghem; apart from the figures, it is like Rousseau's composition without Rousseau's broad and full execution of detail. Among other works are Rembrandt's "The Scribe"; Terburg's fine picture "The Card Party"; a fine and characteristic Metsu — "Interior with Lady Seated, and other figures"; and Rubens's remarkably fine portrait of "Clara Elizabeth Eugenie, Governess of the Low Countries," a three-quarter length of great dignity of style. The collection also includes the remarkably frank painting by Jan Steen of himself, wife, and child, the dame in a heavy sleep over the table after a dinner in the garden, and Jan Steen himself, a brutalised-looking figure, pipe in hand, and puffing the smoke from his mouth. This was seen at one of the Burlington House Loan Exhibitions a good many years ago, when we appended the criticism on Parolles in "All's Well then Ends Well"—"Is it possible, that he should know what he is, and be that he is?" The picture is a clever but disagreeable one, in which the painter seems to have taken a kind of interest in putting on record his own coarseness and vulgarity.

The Goupil Gallery.

THE Spring Exhibition at the Goupil Gallery is most notable for two small but beautiful companion pictures by Harpignies, "Evening" and "Morning," the former especially remarkable for its truth and beauty of tone and atmosphere, and the poetic feeling which pervades it. The other works exhibited are of very mixed interest. In some of them, as in Mr. Priestman's "Riverside Pastures," and Mr. Peppercorn's "Breezy Weather" the taste for the exhibition of raw and crude sketches as pictures seems to have reached its extreme limit. Mr. J. C. W. Cossaar introduces "Waterloo Bridge" in more than one picture, but sadly maltreats it from an architectural point of view. Herr Ziem's "The Grand Canal, Venice" is a picture showing a very fine effect of light and colour, but the buildings are not upright, a point which with too many painters seems to be regarded as a matter of no moment. Mr. M. Mathews's "Windmill in Norfolk" is a fine sketch; Mr. Clausen's effective picture "Roadside Cottages" is somewhat spoiled by the careless drawing of the figure. M. le Sidaner, of Paris, who is one of the new exhibitors, paints winter and snow effects in a curious misty manner of his own; his large painting of "Chartres Cathedral," or rather, Chartres and the cathedral, is effective as a whole, but the cathedral is almost unrecognisable except for its general relation to the site; three other works of the same type, "Le Château," "Le Pont de Village," and "La Maison au Bord de l'Eau," are very effective in their peculiar way. Among others to be mentioned are Ter Meulen's "The Flock," an inspiration from Mauve; Mr. Victor Gilbert's fine little miniature, "Still Life;" and two or three flower-paintings by M. Fantin-Latour, in his well-known style.

Lectures at the Royal Academy.

PROFESSOR AITCHISON'S concluding lecture dealt with stained glass, and was illustrated by numerous coloured slides on the screen. The slides were prepared in the new three-colour process, and were the most successful that we have ever seen. After referring briefly to the discovery of glass, the Professor said that stained glass divided itself naturally into two groups: the Eastern and the Western. The Eastern was characterised by the small surfaces of glass used, and the peculiar rich jewel-like effect produced by its use in perforated stone or plaster slabs with deeply chamfered arrises; the Western, of course, was used in wide expanses, and as a ground for picture subjects containing figures and historic events rather than the mystic patterns of the East. There is very little glass extant of an earlier date than the twelfth century, and the best that has ever been produced was during the thirteenth and fourteenth. The influence of stained glass upon mediæval architecture is second only to the influence of stone groining, which dominated the plan of the Gothic builders. Both groining and stained glass carried to excessive lengths are obvious results of the decadence of Pointed architecture during the fifteenth century. The art of stained glass, like so many of the crafts at the present day, is emerging from the darkness of the periods since the fifteenth and sixteenth centuries; its future seems to us to lie in the hands of the educated part of the community, and especially calls for workers prepared to give up the monetary advantages of being "something in the City" to lead a more healthy and useful life in the strenuous endeavour to master the peculiarities of a craft and apply it suitably to the needs of the present day. What the crafts lack is the best intelligence; mediocrity swamps them, and affectation and eccentricity bring them into disrepute with practical people. The subjects chosen by Professor Aitchison for the series of lectures now concluded have each a special significance for architects of the present day, and should open up to the eyes of architectural students at the Royal Academy to the width and diversity of their calling.

MAGAZINES AND REVIEWS.

IN the *Art Journal* Mr. Claude Phillips continues his very able and complete critical review of the pictures in the Wallace collection. It is to be hoped these articles will be subsequently issued in book form, as they will form an admirable guide for those who wish to study the pictures seriously. The Burlington House Loan Exhibition and the Arts and Crafts Exhibition are each the subject of a critical and illustrated review. We cannot agree with the critic of the former in regarding Tintoretto's very academical picture of the "Nine Muses" as the strong point of the exhibition. The strength of the exhibition is unquestionably in landscape; but among the figure paintings one is surprised to find no reference to so remarkable a work as Etty's "Satyrs and Nymph." Mr. Day, the writer of the notice on the "Arts and Crafts," which is sympathetic in general feeling, comments rightly on the absence in the exhibits of any lingering respect for tradition; "the *personal* note is too much insisted upon"—a great danger in decorative design, from which results the want of repose which is so much felt in the exhibition. The good-natured travesty in this week's *Punch*—"The home made beautiful according to the 'Arts and Crafts,'" is not without its point.

The *Magazine of Art* opens with an interesting article by M. Louis de Forcaud, Professor of Æsthetics at the Ecole des Beaux-Arts (a translated article, we presume), on "The German Emperor's Collection of French Paintings." Part of these were collected by Frederick the Great, and they are distributed among the Imperial residences at Berlin, Charlottenburg, Potsdam, and Sans-Souci, and are not very accessible to the public; some information about them is consequently of the more value. The writer, whose article is to be continued, takes occasion to tell us a good deal about the now rather forgotten painter, Pesne, who seems to have attracted Frederick a good deal; his other tastes were for Watteau and Lancret, when they could be got at a good

bargain, a point which Frederick by no means overlooked. The present article deals only with his foundation of the collection. Mr. Aymer Vallance writes on "British Arts and Crafts in 1903"—in reality a review of the Arts and Crafts Exhibition. Mr. F. Butcher, of Lucknow, contributes an article on "Indian Art at Delhi," being remarks on the Coronation Durbar Exhibition. We do not agree with him in admiring the two articles of Madras work illustrated in the first page, the round table and sideboard to wit; they are Pagan grotesque, however ingenious and finely worked; the elephant-headed table legs, which he admires, are most uncomfortable-looking and unconstructive. An illustrated article on Mr. Strang's etchings shows how completely, in his work, whether we like it or not, we have "got rid of the commonplace" which is the bane above all things of etching. Mr. Wyllie gives the second instalment of his essay on "Nature's Laws and the Making of Pictures." However clear he may be in his own mind as to what he means, he does not always succeed in making it quite clear to the reader. Although his five illustrations are numbered (figs. 1, 2, &c.), there is no corresponding reference in the text except in one instance, so that the reader is put to a little trouble and comparison to find out which illustration is referred to at the moment. And his use of the expression "vanishing line" is rather puzzling to the reader. We can see what he means in his comment on fig. 3, but it will rather puzzle the learner when he is told that the cart tracks "will vanish on the line marked by stars," when he sees that they do not by any means "vanish" there, but are still far apart on meeting that line. The principle is all right; it is only a question of phraseology. An editorial article under the head of "Chronicle of Art" speaks strongly and plainly on the subject of the Wellington Monument dispute, pointing out that the proposed sculptor has not been educated in the school of Stevens, and that the sculptor properly schooled to complete his work is either Mr. Gilbert or Mr. Brock; in which we agree entirely.

The *Berliner Architekturwelt* is largely occupied with illustrations and description of the Wilke house at Guben, of which MM. Spalding & Grenander, of Berlin, are the architects. This is interesting as a large and elaborate example of German house architecture in the ultra-modern style. It is a very clever design as a whole, and full of very clever detail; the drawback is, as in other German examples, that the cleverness is too obvious and insistent. The most pleasing piece of detail is the fireplace illustrated on p. 417, which shows an artistic treatment of metal-work.

The contents of the *Architektonische Rundschau* do not present much for special comment. We have another of those Mediæval-looking "Bismarck towers" of which there has been such a crop in Germany, in illustration if not in execution. Professor Baumbach's house at Wilmersdorf, by MM. Spalding and Grenander, is much quieter in character than the same architects' Wilke House in the *Architekturwelt*, and has a pleasing effect as a whole, though there is too much tumbling about of high-pitched roofs at all angles. Perhaps the most interesting illustration in the number is the sheet of four small fine sketches of the cemetery church and subsidiary buildings at Pasing, by Herr Berndl of Munich.

The *Fortnightly* contains a remarkable article by Mr. Russel Wallace on "Man's Place in the Universe," which is no less than an attempt to show the probability, on logical grounds, of the old pre-astronomical creed that intelligent man is after all the important and central fact in the universe; and that this globe, the small satellite of a third-rate sun, is on that account the centre of creation, in intent though not in size or mechanical position. This idea has had a fascination for many minds, even in these scientific days; and, of course, it may be so, for all we know, and the idea is from one point of view a sublime one; but we should hardly think Mr. Wallace's reasoning will convince any one of it. Part of his argument is that our system appears to be almost exactly in the centre of the rather flat circular plane of associated worlds the boundaries of which form the visible phenomenon known as the Milky Way. If man lived on the sun there might be more to be said for that argument; but why on his third satellite, and on that alone? Mr. Wallace, though he ignores this possible answer, goes on to meet it by the argument that the earth is placed at the exact distance from the sun, and with the precise constitution, to meet the requirements for intelligent life; but the fallacy of this argument is that it ignores the possibility of intelligent beings having bodies constituted otherwise than our own. It is quite certain that no other planet except Mars is at present in a condition to support life at all like our own (some physicists deny the possibility as to Mars, though we think on hardly sufficient grounds); but is there no possibility of existence of intellectual minds in bodies quite different from that of man? Mr. Wallace's article will be largely read—the subject has a fascination for all thinking persons; but we do not think it will convince any one. There is something too disproportionate in the idea of this small planet being singled out from all the vast stellar universe as the sole abode of thought. The same issue contains an article which is amusing without meaning to be so; that by Mr. Arthur Symons on "The Painting of the Nineteenth Century," in which we are bidden to accept Mr. Whistler as the really intellectual English painter of the nineteenth century, while nearly three pages are devoted also to that rampant colour-dauber Monticelli, one of the bad "sports" of modern painting. Things are come to a fine pass when this sort of writing is accepted, and seriously printed, as art criticism.

Blackwood, under "Musings without Method," devotes several pages, which are certainly very much "without method," to the question of the Wellington monument, taking the usual amateur Englishman's tone of sneering at all recognised artists as persons who either have no right to an opinion, or who are actuated by interested motives. The writer's language in regard to Mr. Spielmann, who is a very competent judge in the matter, and who has no occasion to "seek publicity" by writing to the *Times*, is absolutely impertinent. The writer of course entirely supports the Dean and Chapter in their unwarrantable private action in regard to a national monument. The article is significant, like that above referred to in the *Fortnightly*, as showing the kind of judgment which English magazine editors have in regard to art.

In the *Contemporary* Mr. Haldane's article on "The Labourer and the Law" is a kind of summary of the state of the law in regard to the action of trade-unions, as illustrated by recent cases which have been reported or commented on in our columns. The summary of his argument is that the workmen of this country have a number of grievances arising from the obscure state of the law; that public feeling is in favour of redressing these grievances; but it will ask that they should first be formulated in a definite and intelligible fashion. "It is no use entering upon the work of reform unless you know definitely what you want." The same issue contains an article by Mr. W. R. Lawson on "British Railways Waking Up," the subject and aim of which, in the light of recent events in the railway world, may be readily imagined. There is one point which is rather overlooked in the argument. The writer refers to the profitable working of goods traffic, or what they call "freight trains," in the United States, and ascribes it to the system of not letting any but fully-loaded trucks go out with a train; while in England, as every railway traveller can observe for himself, goods trains constantly traverse the line with many trucks only half loaded. But he neglects to say how long the American freight manager keeps his customers waiting for their goods while he makes up the full truckload. We got some light on that point in the late Mr. Norris's powerful novel, "The Octopus," under which title is figured the American freight railway system. That was a book written by a man of genius and keen observation, and we commend it to the attention of those who pine after American railway systems. The fact is that our railways endeavour to serve their customers with as little delay as possible, and their want of system in loading, which may reduce their own profits, is directly in the interests of the public at large.

In the *Nineteenth Century* Mr. J. Foster Fraser writes an article, the result of a visit to the United States, on "The Success of American Manufacturers." It confirms what we have been told by other witnesses, that the success of American manufacturers is largely due not to the superiority of the American workman so much as to the alertness and open-mindedness of the employer, the extensive use of labour-saving machinery, and the encouragement given to capable workmen and those who can suggest improvements, and who are made to feel that any improvement they can suggest will meet with recognition and will be an advantage to themselves. He thinks the British workman the most intelligent of his class in the world—"Give him time, and he will turn out a better article than anybody else." But the American workman is alert, and does not feel that machinery is going to displace him:—

> "It is exceptional indeed for a British employer to get an improvement on machinery suggested by a workman. In the first place, the British workman has not that zest for his work that the American has; in the second place, it is none of his business to invent; in the third, even if he thought of an improvement, he has a shyness about approaching the employer; fourthly, the chances are he might be snubbed for his trouble.
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> Nothing like this exists in America. There is a much closer relationship between employer and workman. . . . . The workman knows if he strikes an improvement it is going to be a good thing for him personally. If he thinks of some alteration whereby he can turn out twice as much, he knows the employer won't expect him to turn out twice as much for the same pay. They are partners, and the workman will get at least half the advantage. So there is an incentive to all the mechanics of America to adapt. They make it their business to improve; and it is by this wholesale adoption of labour-saving machinery that the difficulty of high wages has been largely overcome."

This employment of labour-saving machinery, the writer adds, is the reason why, as the Englishman walks through American workshops, he is startled to see so few middle-aged men. What is done by a man of forty in England is done by a lad of twenty in America, "and where we would employ lads the Americans employ girls."

To the same issue of the *Nineteenth Century* Mr. Langton Douglas contributes an article, under the title "The Real Cimabue," to show that the real Cimabue was absolutely unreal, and has been given the credit of other men's works. This is likely enough to have been the case in some instances, and as to Vasari's inventive faculties we quite agree with him; but it appears to us that the fact that works were attributed to Cimabue which were not his is in itself an indication that he had done something to establish a reputation; and moreover one cannot help thinking that when Dante said that "Cimabue held the field" before Giotto, he was not speaking without more knowledge of the facts than can well be attained at the present time.

Harper contains an important article by Signor Boni on "Recent Discoveries in the Roman Forum;" short, but worth careful reading from beginning to end. An article on Shakespeare's "Richard II.," by Mr. Swinburne, is accompanied by some clever illustrations by Mr. Abbey, including a coloured study of the supposed appearance of the weak monarch in the regal costume of the period. M. Janvier's article on "The Dutch Founding of New York" is accompanied by reproductions of some very interesting old views, including one of the earliest known illustrations of Niagara Falls, from an old copperplate engraving.

In *Scribner*, under "The Field of Art," "R. S." writes a second article on American Pottery, with some special attention to the Rookwood Pottery, made by a Company which has been in active operation for about twenty years. It seems to be ware with a decided glaze, decorated with flower designs naturalistic in form but not in colour, on grounds of different greys, warm browns and buffs, passing into each other in an irregular manner; the flower subjects on these varying grounds being in monochrome, generally white. In the illustrations they have an artistic appearance and show good outlines, but we should surmise that they look better in black and white illustrations than in the original colour.

The *Cornhill* contains an article by Mr. D. G. Hogarth, and of course a very competent one, on the Cretan Room at the Burlington House exhibition. The conclusions in it are much the same as in the article we have already published on the subject, though, with more space at his command, the author is able to go into more detail. The same number contains a very amusing article, "Travels with a T-Square," which recounts the adventures—probably to be taken *cum grano*—of an architectural draughtsman out of work, and his

endeavours to gain engagements in offices in various American cities. He appears to have at last found rest for the sole of his foot in a San Francisco office, "in the most comfortable drawing office among the most companionable fellows I had ever known." We should like to know how much of the writer's statement of his nomadic experiences is really true. If it represents facts, it is a curious study, and indicates that the "Yankee" is not yet quite extinct.

The *Revue Générale* contains a long and important article on mining law in France—"Le Régime Légal des Mines et ses Lacunes," especially as to the relation between surface rights and subsoil rights, and the manner in which it is dealt with by the Code Napoléon and by subsequent legislation. The article touches more or less on mining law in other countries, England included.

Knowledge is a very good number this month. Mr. Antoniadi's essay on St. Sophia, of which the second portion appears, accompanied by a plan showing the original walls and the subsequent additions, should be read by architects, whether they accept all the writer's conclusions or not. Miss Clerke, in the first of a series of papers on "Modern Cosmogonies," gives a concise and lucid sketch of the history and development of the nebular hypothesis; and Mr. Crommelin contributes the second chapter of his study of "The Path of the Moon," *i.e.*, the actual course described by the moon in her path around the earth—a much more complicated subject than is perhaps generally supposed.

In the *Antiquary* the most noteworthy article is that by Mr. E. W. Brabrook on Mediæval lavatories, suggested by the study of the remarkable example at Mellifont Abbey. "Notes from a Seventeenth Century" is contributed by Mr. Philip Whiteway, the diary being that of an ancestor of his own, William Whiteway of Dorchester. Mr. Le Blanc Smith commences a series of articles, with some illustrations, on "Some Derbyshire Fonts."

THE ARCHITECTURAL ASSOCIATION: "COMPETITIONS."

AN ordinary general meeting of the Architectural Association was held in the Meeting Room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, W., on Friday last week. Mr. Louis Ambler, Vice-President, presided, in the unavoidable absence of the President, Mr. H. T. Hare.

The following gentlemen were elected members of the Association:—Messrs. F. J. Commin, W. Curtis Green, W. Gilbert, F. Jennings, Owen Dudley, and G. N. N. Clay. Mr. C. F. A. Voysey was also elected, by acclamation, and Messrs. E. J. Wellman and A. B. Yeates were reinstated.

Mr. R. S. Balfour, Hon. Secretary, announced the following donations to the library:—"Quantities," by the late Professor Banister Fletcher, presented by Mr. B. T. Batsford; and a cabinet for the card index catalogue of lantern-slides, presented by Mr. Wonnacott. A vote of thanks having been accorded to the donors,

Mr. H. P. G. Maule, Hon. Secretary, proposed a vote of thanks to Mr. Henry Tanner for permitting members to visit the National Savings Bank and Post Office Buildings, Addison-road, West Kensington, on the 21st ult.* The motion was agreed to.

The Chairman said it was with much pleasure that he announced a donation of 10*l.* 10s. towards the New Premises Fund, received from the Birmingham Architectural Association. It was a matter for great gratification that the Birmingham Association had made this donation, and he desired to move a hearty vote of thanks to them.

Mr. Seth-Smith seconded, and the motion was heartily agreed to.

The Chairman announced that a letter had been received from Miss Penrose, thanking the Association for their vote of condolence passed at the last meeting on the death of Mr. F. C. Penrose.

Papers were then read by Mr. Alfred W. S. Cross, M.A., and Mr. H. B. Creswell on "Competitions." The first paper was read by Mr. Cross, and was as follows:—

As one who is greatly in favour of the system of obtaining designs for public buildings by means of competitions, I am, unfortunately, unable to agree with many of the views adopted by Mr. Creswell in his extremely able paper. I have had, quite recently, the pleasure of perusing an equally excellent paper on the same subject by Mr. G. H. Willoughby, of Manchester, in which its author, a strong believer in the system, as he has shown both by precept and practice, writing from a standpoint diametrically opposite to that selected by Mr. Creswell, argues in its favour, as follows:—

"From my point of view, it is a mistake to suppose that the profession can dispense with healthy, stimulating competitions. A man never knows what is in him until he has measured himself with his fellows in real honest work of this kind.

Consider what a large field for effort is presented to our younger men at the outset of their career, when youth, with its enthusiasm and capacity for work, is so strong.

With many, the commissions which they have in hand fail to fully occupy their time. Does not the opportunity thus afforded through the medium of competitions, which is, I think, confined to our profession, create, if grasped, a lasting habit of steady, continuous application and activity—a prelude to the time when hands and head will be fully occupied on more certain work?

Let me remind you of the endless opportunities which cross our path, through the medium of competitive problems, for the study and investigation of the many kinds of structures the architect of to-day is called upon to design."

These words of Mr. Willoughby represent with more or less exactitude, the views of those architects who, while believing that competitions are desirable and tend to the advancement of architecture, are at the same time determined to do their utmost to remedy the undoubted evils connected with the competition system in vogue in this country, which evils, involving as they do many miscarriages of justice and frequent deviations from rectitude on the part of promoters and assessors, must be rooted out, and with this object in view a Society for the Reform of Competitions has been formed, and is now, I honestly believe, doing good work in its efforts to protect members of our profession against the wiles of unscrupulous promoters of competitions. But, after having made good their position with regard to promoters, competing architects should advance a step further and insist upon the employment, wherever practicable, of a jury of assessors in place of the present one-man system, which has proved to be a dismal failure. It is neither desirable nor necessary for me to enter into particulars, or to call attention to specific instances in which flagrantly unfair awards have been made, the general fact is common knowledge, and there are doubtless many members of this Association who have suffered, at times, from the incompetence, lack of sound judgment, call it what you will, of certain assessors.

In France, where, as a matter of course, "they manage these things better," and in America, the jury system is now almost always applied to important competitions, in the latter country with the following code for the conduct of competitions, as presented to the American Institute of Architects at their annual Convention in 1900, viz.:—

Form of Competition.—A competition as a means for the selection of an architect may properly assume one of the following forms:—

(*a*) "Limited" to a certain number of architects, each of whom is invited to take part.

(*b*) "Open" to all who desire to enter, or to all of a certain class.

(*c*) "Mixed." Certain architects being invited, but others being at liberty to take part.

Payment of Competitors.—In all competitions the first prize should be the award of the commission to design the building and superintend its construction, and the programme should definitely state that the successful competitor will be so retained, and that he will be paid for his services at the rates established by the American Institute of Architects. To allow for the contingency of delay, or of the discontinuance of the work, the programme should provide for a substantial payment to the successful competitor on the award of the competition such payment to be regarded as on account of the final commission.

Payments to unsuccessful competitors should be as follows, viz.:—In limited competitions each should be paid a fixed amount. In open competitions prizes fixed in number and amount should be provided. In mixed competitions the two classes of competitors should be paid in the manner above described.

The Professional Adviser and the Jury.—It is highly desirable, in the interests both of the owner and the competitors, that a professional adviser should assist in the preparation of the programme, and that the professional adviser, or a competent jury, consisting, at least in part, of experts, should assist in making the awards. The professional adviser, or jury, may have full power to make the award, or they may select a number of designs, and, placing them in order of merit, leave the final choice to the owner or his representatives. Wherever possible, the adviser, or the jury, should make a positive report in favour of one design and recommend the employment of its author as architect for the building.

The Programme.—The programme should be so drawn as to form a contract. It should—

(*a*) Name the owner of the structure forming the subject of the competition, and state whether the owner institutes the competition personally or through representatives. If the latter, it should name the representatives; state how their authority is derived, and define its scope.

(*b*) State the kind of competition to be instituted and, in limited competitions, name the competitors, or, in open competition, if it is limited, geographically or otherwise state the limits.

(*c*) Fix a definite time and place for the receipts of the designs; the time should not be altered except with the unanimous consent of the competitors.

(*d*) State the limit of cost, if fixed, the desired accommodation, and the conditions respecting the site.

(*e*) Fix uniform requirements for the drawings, giving the number, the scale or scales, and the method of rendering. As the representation of a general scheme (rather than of a design perfectly studied in all its parts) is the object of the drawings, they should be of the simplest kind, capable of explaining such a scheme.

(*f*) State whether the submission of more than one design by a competitor is forbidden or permitted.

(*g*) State whether the competition is to be anonymously conducted or not, and if anonymously, provide the method.

(*h*) Name the judge or jury, or provide a method for their selection. Define his or their power.

(*i*) Provide for placing out of the competition any drawing which violates the terms, or any set of drawings whose authors have so disregarded the terms as to deserve the extreme penalty.

(*j*) Provide that during the competition there shall be no communication upon anything relating to the competition, except in writing, between any competitor on the one hand, and the owner or any representatives of the owner, the professional adviser, or any juror, on the other, and that any information, whether in answer to such communication or not, shall be given in writing, simultaneously to all competitors. Give a date after which no question will be answered.

(*k*) Fix the nature or the amount of the awards or prizes.

(*l*) State, in case the professional adviser of jury are not empowered to make the award, in whom such power is invested.

(*m*) Fix the period of time within which the final decision will be rendered.

(*n*) Provide for sending the decision and a copy of the report of the professional adviser or of the jury to each competitor.

(*o*) Provide that no drawing shall be exhibited or made public until after the award and not then without the consent of the author.

(*p*) Provide for the return of successful drawings to their respective owners within a reasonable time.

(*q*) Provide that nothing original as to this competition in unsuccessful designs shall be used without compensation to the author of the design in which it appears.

Whilst one may not agree absolutely with each individual clause in the above exhaustive code yet, broadly speaking, it appears to have been carefully and impartially framed alike in the interests of both promoters and competitors, and it is fundamentally sound in its insistence upon the following essentials which should be borne in mind during the preparation of every set of conditions issued to competitors in this Country.

1. A definite pledge should be given by the

* See our issue for February 28 for an account of the visit.

promoters as to their intention to retain the services of the successful competitor.

2. The conditions should be framed to constitute a contract between the promoters and the competitors.

3. The drawings required should be of the simplest kind necessary for explaining the competitors' schemes.

4. A copy of the assessor's report should be sent to every competitor.

5. No communication, except in writing, should be allowed upon anything relating to the competition between any competitor on the one hand and the owner or any representative of the owner, the professional adviser, or any juror on the other.

With regard to (1), this clause is essential to the success of any properly-organised competition. Promoters must be brought to understand that the payment of a premium is quite insufficient to reimburse the successful competitor for his outlay of time and money. As to (2) this proposal is an innovation as far as this country is concerned, but it is one that will form, sooner or later, an integral part of the conditions of the competitions for all public buildings. (3) Has been evidently framed with the object of minimising the amount of work required from each competitor, and any experienced competing architect will vouch for its necessity. (4) Constitutes a laudable attempt to allay many of the heart-burnings that almost invariably follow an award. In my opinion, it is very desirable that a copy of the assessor's report, containing the award and his critical notes on the various designs, should be issued to every competitor. I have here a copy of such a report, kindly lent to me by its author, Mr. Paul Ogden, of Manchester, which is, in my opinion, ideal in its characteristics. It contains photographic reproductions of all the plans submitted, together with the assessor's criticism of each design, by which competitors are enabled to obtain a very fair insight into the reasons governing the award.

The last stipulation (5), although it might perhaps be strengthened, is, I think, a wise one, as under our haphazard system, or rather want of system, a competitor is often tacitly allowed to obtain special information from individual members of the promoter's committee or from officials and subordinates connected with them, and this course of action is to be deprecated, as the contest between the competing architects should be fought on the information conveyed by the conditions, and by the subsequent replies to questions, and by that information alone.

On the whole I think, gentlemen, you will agree with me that the problem relative to the conduct of architectural competitions having been successfully solved by the American architects it is the duty of all members of our profession in this country to support the movement that has recently been initiated to ensure a similarly satisfactory result here. By doing so you will be upholding the dignity of the profession, for what other body of educated men receives the insults that are constantly offered to us by promoters of competitions, who often advertise for designs for buildings which they have not the slightest intention of carrying out, or for which they have actually selected their architect before the issue of the conditions for their so-called competition. To put it briefly, competing architects must sift the good competitions from the bad ones, and protect themselves against unfair or incompetent assessors by insisting upon the introduction of the jury system of assessing. The only argument I have heard advanced, so far, against the appointment of jurors is that emanating, I presume, from those architects who have too great an appreciation of the value of the fees obtainable under the present system of assessing to make them desire any change; to the effect that the excessive cost of the jury system militates against its adoption, but if—as in America—no first premium be awarded, and the definite commission to carry out the work be substituted, there would not be, apparently, any insuperable difficulty in providing the necessary funds for the payment of three or more jurors.

Mr. H. B. Creswell then read the following paper:—

It is six years since I stood in this room, at the invitation of your Committee, to read a paper before you on this same subject of Architectural Competitions, which brings us here to-night, and I do not think that the interval has advanced this question any nearer to a satisfactory solution now than it was then. Six years ago the conclusion was forced upon me that arguments and suggestions on the subject of architectural competitions had reached very much the same position in the history of the world as puns, namely, in this—that they had all been made, and I do not think circumstances have changed since then sufficiently to make discussion of this subject more profitable than heretofore.

I would like to remind you that the whole subject of competitions, in almost the same aspects and involving the same dilemmas, the same difficulties, the same differences of opinion, has beset our profession like an incubus, and has provoked lengthy discussions, protracted correspondence in the professional journals, special commissions, sworn fraternities, and self-denying brotherhoods continuously for nearly 100 years. I can assure any one of you who cares to refer to the records which will be found within the walls of this building, that he will be truly amazed at the huge amount of energy and mental activity in arguments, research, and classification of facts, which has been brought to bear on this subject; and, I may add, by some of the most conspicuous and able men of their day; and yet, although in the particular of professional assessors, promoters of competitions have fallen partially in line with our views, the main question remains no nearer solution, and the confusion in the conduct of competitions is perhaps as great as it ever was.

I find that the subject of competitions has been prominently brought before us here or at the Institute or elsewhere, during past years as follows:—

In 1838 a Committee was appointed by the Institute to consider this subject of Competition, who, having thoroughly ivestigated it, seemed apalled by its difficulties, and concluded by publishing a report containing much "valuable information," but leaving the remedy very much as it was before in the hands of the profession. In 1850 the Architectural Association considered the question and drew up a report containing a code of regulations which it was suggested would meet the difficulties of the case. In 1857 Mr. George Morgan read a paper before the Institute upon this subject, which led to a debate, in which every one agreed again that something ought to be done. In or about 1860 the "Architectural Alliance" took steps to draw up a form of circular suggesting terms of "General Conditions" which were sent to such Committees and Councils as showed symptoms of breaking out into competitions. In 1871, on the occasion of the General Congress of Architects, Professor Kerr read a valuable paper on the subject of the Commercial Aspects of Competitions. Everyone agreed that something ought to be done. A special committee was again nominated and deputed by the Congress to investigate the matter and report accordingly. In 1872 this report, together with a code of proposed regulations for the conduct of competitions, was read before the Congress of that year, and the Congress were, with one exception, unanimous in agreeing that something ought to be done. The exception was Sir Edmund Beckett, who made a very able and interesting speech in the character, as architects may consider, of Devil's advocate.

I may mention here that it is the recommendations made by this Report, revised again 1883 and in 1892, which to-day stand in the Institute Kalendar as "Suggestions for the Conduct of Architectural Competitions." In 1879 Mr. Thomas Porter read his exhaustive paper on the subject, in which the best that has been said in demonstrating the suicidal folly of the profession in acquiescing in the competition system is there printed and set down. After hearing that paper, everybody was as completely satisfied as they had ever been that something ought to be done. It was a past-President of the Architectural Association, Mr. Cole A. Adams, who the next year did—or very nearly did—the necessary "something" by drawing up and circulating a memorial which was signed by 1,300 architects, who thereby bound themselves to take part in no competition save where a "professional adjudicator of established reputation was employed." This was presented at the Institute by the late George Edmund Street in 1881. Since then the subject has been again discussed, and there have been papers read since by Mr. Baggallay and others.

It will be noticed that a periodic recurrence of the subject of competitions is endemical with us—an affection of the spleen—and seems so essential a factor of the healthy existence of our profession that we may at least view this present outburst as an intimation of our healthy existence.

I am not going to restate in detail the injustices and stupidities which have been brought to the charge of those who organise competitions; they are vividly in the minds of all. I do, however, briefly propose to remind you how disastrous are the main principles which are involved in our system of competitions, because we are apt to reason from our own personal experiences, and personal ambitions and prejudices, and I think that it is this attitude which has produced and promulgated the confusion which makes impossible any chance of that clear view, and approach to unanimity, by which alone we could encounter and overcome the difficulties we discuss so exhaustively and with such futility. I will ask you to join me in my conviction that we shall never reach a solution until we can make our own immediate interests subservient to the wider interests of the profession at large. I will then ask you to let me suggest to you wherein the root of our trouble lies, and to state what I believe to be the only solution which will ever be possible until we are a closed profession, and registered, and placed under compunction to obey the rules which are made for us.

First of all I would remind you that competitions do not in any way influence the number of buildings erected. Hence the whole mechanism of competitions effects nothing more than the selection of those particular architects who shall be appointed to execute certain particular buildings. Their whole justification rests, then, on the substantiation of the fact that the process of selecting architects by competition, is better for the profession and for the national architecture, than if the architect were selected by his reputation or his proved fitness for the work. The question is *not*, gentlemen, whether competitions afford a short cut to notoriety for individuals, but whether, taken as a whole, that system of selection is the best system of selection. I am not going to urge the reasons which convince me that the competitive method of selection is a bad method, as a frequent usage, and bad in all cases except of limited competitions, but I will ask your permission to quote the mature opinion of Professor Kerr on this subject. He is reported to have spoken these words in 1871:—

"The only conclusion I can arrive at with any regard for common sense is that the system of architectural competition is radically unsound in principle, and in practice most prejudicial to the profession of architects, both financially and morally. Whether it benefits the public in any way may be for a moment questioned, but even on this point I believe the answer must be eventually in the negative. . . . . I have never known any man succeed in establishing by competition any reputation which he would not have better acquired without it, except occasionally a bad reputation, which, but for competition, he might fortunately have been able to escape. I know of no other temptation in business so subtle as that which assails, as I think, a high-minded man when involved in architectural competition, and especially if he is to be successful. I know of men who have succeeded by competing in attaining to the promise of a position which they were not qualified to hold, but they have never been able to retain it, and have in several cases been ruined in their legitimate prospects by the consequences of such hasty and fallacious good fortune. I do not hesitate to say that competition success leads generally to personal and public disrespect; and this not through Jealousy alone or personal offence, but by reason of the ordinary estimate of the qualities by which alone such success can be obtained."

The remarkable emphasis of these words from a man of the experience and acquirements of Professor Kerr justify a dogmatic assertion, surely, that it is *doubtful* whether the apparent advantages of the competitive method of selection are not abrogated and overshadowed by the grave disadvantages attaching to it; and with that moderate statement before you, I will remind you at what costs and by what burdening of ourselves do we acquiesce in this system of competitions.

There are about thirty-six unlimited public competitions advertised yearly in England alone. The value of the average building is about 9,000*l*., the number of competitors about forty, and the value of the first premium about 56*l*. (with further premiums aggregating to 52*l*.).

With regard to the much-debated question of the cost of producing the competition

drawings, I will confine myself to the conclusion drawn in this matter by the special committee which sat to consider the subject of competitions in 1872. The Report of this committee stated that the cost of producing competition drawings, irrespective of principal's time, varied from ¼ to 20 per cent., or from 2*l.* to 800*l.*; and we know that there are sometimes 100 to 200 sets of drawings, each set involving from four to twelve strainers.

Professor Kerr recalls cases of 200 sets of competitive designs in competition in his day, and we, most of us, remember the Emanuel Church, Exeter, competition, where there were 405 applications for the conditions, although, owing, no doubt, to the publicity which was given to the growing dimensions of the competition, only some 200 odd sets of designs were sent in, if my memory serves me rightly. I think I am right also in saying that the value of the building was only some 5,000*l.*, and that the cost of the producing the drawings submitted in competition exceeded considerably the whole cost of the building.

From this it is apparent that in a competition for a building costing 9,000*l.* the drawings would cost each competitor between 2*l.* and 800*l.* (my own personal estimate is 30*l.*, which seems a moderate one), so that we may consider that in a competition for a building costing 9,000*l.* the cost of producing the drawings would be 1,200*l.*, which is nearly three times the sum which would be paid by the promoters by way of commission to the architect for designing and carrying out the works, and it not unfrequently happens that the cost of producing the drawings in competition for a building exceeds, as in the case of the Emanuel Church, Exeter, the whole cost of erecting the building itself.

I have found that the value of buildings advertised in the years 1894 and 1895 was 540,000*l.*, which is a sum of 270,000*l.* in each year, and in 1858 Mr. George Morgan found that in the previous year, a year of depression in the building trade, public competitions were advertised for buildings estimated roughly to cost 300,000*l.* I may also say that I have it on the best authority—the authority of a gentleman whose opinion you would hardly question in this matter—that at least half the architectural competitions are not advertised in the London papers, so that we may decide that the value of buildings advertised in competition in one year in England amounts to not less than *half a million.*

The cost of producing drawings in respect of these buildings, deduced from the figures I have already given you, is 65,000*l.*, estimating the average competition at 9,000*l.*, and it has been shown by Mr. Porter that the waste drawings prepared in competition during the twenty-five years previous to the year 1872 if laid edge to edge would pave the way from the doorstep of this house we are now in to Grantham, and if laid flat one on top of the other would make a tower 1,000 ft. higher than the highest mountain in the world. I may add that I have tested the equation to satisfy myself that it is the drawings themselves that would afford this impressive spectacle, and we may not cajole ourselves into a belief in architectural competitions on the ground that this monument to our folly is composed of wooden strainers.

Gentlemen, it has been objected that the cost of producing these competition drawings should not be considered as lost to the profession, as the bulk of the money passes from the pockets of its senior to its junior members; but to say this is to revive the old economic sophistry which, on the ground that commercial prosperity relied on the circulation of money, used to advocate that it would benefit the country to break all its windows once a month—or, let us say, benefit the glaziers that they should break their own windows.

The difference between profitable and unprofitable labour need not be urged here, but it may be pointed out that if it is an advantage to the profession to produce nearly 65,000*l.* worth of waste drawings in every year, it would still more greatly benefit the profession if such drawings, when completed, were sacrificed as an offering to our common weal, and new sets prepared for sacrifice in the moil of competition. The advantages of competitions as viewed by some of us would then be doubled.

I always feel that we do not fully realise the significance of these facts, and perhaps you will bear with me if I draw the comparison in the form of wasted labour instead of wasted money. If we estimate the proportion of the total of 65,000*l.* spent yearly in waste drawings which is paid away to draughtsmen at 58,500*l.*, which is nine-tenths of the total sum, and consider the average draughtsman as paid at the rate of 2*l.* per week, we find that there are in England alone at this moment nearly 600 healthy persons closely employed solely in the production of drawings the destiny of which is not in any wise so useful as to line the footpath from here to Grantham; and it is our profession that provides and maintains these men for this distinguished purpose. Competitions account for 600 supernumeraries in our profession—600 more architects and potential architects than can be distributed in the legitimate business of designing and erecting buildings.

With reference to some of these figures of mine and corroborative figures derived from Mr. Porter's historic paper on this subject at the Congress of 1871, which I made use of in my previous paper, Mr. Aston Webb, who was then present and who spoke, seemed much depressed at the depreciation of competitions, implied thereby, and said, I quote from the report in the *Builder*, "that he remembered Mr. Porter very well and it should be remembered that that gentleman himself very often took part in competitions, and although, according to his statistics, competitions had such disastrous results, he was a competitor on a good many occasions. It was impossible to check the statistics either of Mr. Porter or of Mr. Creswell and as had been said there were such things as 'lies, big lies and statistics'." Now, gentlemen, anyone may check my figures who cares to give a certain, not inconsiderable, number of hours to the advertisement sheets and news paragraphs of the *Builder* during the years 1894 and 1895, and as to Mr. Webb's facile use of the word "lier," I believe Mr. Porter's reputation is as invulnerable to irresponsible aspersions of that sort as my own is untouched by them. However, I will say no more on that matter. Some people are not so sensitive or so circumspect in making implications of falsehood as others; in fact I am aware of a class of people wherein one man will call another a liar with the idea of conveying friendly congratulations. But what I do strongly protest against is that we should be so blindly concentrated upon our own personal interests and so consumed in self-appreciation that we grudge to extend to the subject a consideration which may show that the convenient way for us individually is not the best way for us collectively.

I once heard a young man referring to competitions as "the young man's friend." What he wanted to say was "I am a young man and have just won a competition."

It is exactly this personal, circumscribed, prejudiced attitude towards competitions which has kept us all these eighty years and more in hopeless quandary, and surely Mr. Porter was perfectly justified in competing while yet condemning the system under which he competed, and his pronounced expressions of opinion and the evidence of his bias against competitions gives special value to the propositions of his paper, and greater importance and weight to his wider depreciation of the whole principle of competitions by reason of his conviction being aloof from his personal proclivities. Personally may I say that I have never entered for any competition for the reason, as I believe, that I am deficient in British sporting pluck, but I should not hesitate to do so if it seemed profitable or amusing, or I found myself in circumstances advantageous to success.

The framing of competitions and the enactment of competitions is, as I would insist, purely a matter of business and of commercial enterprise. Upon no other basis is their existence intelligible. There is no question of philanthropic motives existing, nor of a mutual scheme for mutual benefit, that I ever heard of. The conditions of competitions as now drawn up may be, in general, very fairly described as a sham legal instrument. It is a sham form of contract wherein the obligations of the competitors are clearly and exactly defined, and the obligations of the promoters set in such loose, ambiguous terms as render them open to any interpretation that subsequent events may show to be most profitable to the promoters. The conduct of a public or limited competition is clearly a matter of contract, and it is the business of each party to see that his interests are properly protected in the terms of that contract. It is therefore weak and futile for competitors to persistently cry out and protest when they find that they have the worst of the bargain. It is usual in such cases for us to charge the promoters with having broken their word, and with having falsified their explicit undertakings; but surely redress for such injury as is here claimed lies not in the oblivion of the sympathetic columns of the professional Press, but in an action in the High Court. The truth is, however, that it is very rarely that promoters of competitions go back on their precise undertakings, or falsify their explicit promises. This, I observe, is not for any fear of consequences or for conscientious scruples, but for sheer lack of any precise undertakings to go back upon—an utter dearth of any explicit promises to falsify. When an assessor's award is set aside, or when the winner of the first premium is supplanted in his commission to do the work, there are invariably protests long and loud; pathetic appeals to common honesty and fair treatment from us poor architects, who forget our greedy rivalries for the moment, and are bound in one common sympathy of discontent.

We are continually complaining that it is unfair and an indignity to the profession to expect architects to compete when no professional assessor is employed. Yet 50 per cent. of the competitions advertise no professional assessor. Instead, they advertise the absence of a professional assessor. Nevertheless, we respond to that invitation with our modest waggon-loads of elaborate drawings. We exclaim that it is an affront to offer a premium and to merge it in the commission. Yet we hustle each other to share in that affront, and the enthusiasm with which we respond to the invitation of the promoters might naturally be expected to further reduce the small proportions of twenty-two competitions in 100, which still omit to expressly stipulate that the premium *shall* merge in the commission.

We protest, and take frequent published occasions to flourish the fact in published printings that the reason we compete and the only inducement to our entering into the competition is that we shall be commissioned to carry out our work and complete the execution of our design. We declare that the premium offered is not a provocation to compete, and we say that, with few exceptions, the premiums are inadequate to repay the cost and the trouble of producing designs and drawings. Nevertheless, in spite of these forcible exclamations, I find in the two years 1894 and 1895 that in 54 per cent. of competitions there was an express stipulation that the promoters did *not* bind themselves to accept the first design, and in 35 per cent. that they did not bind themselves to accept any of the designs, and in *none* of the published conditions was a promise made to accept a prize design, nor do I recall any case in which the conditions have contained any such undertaking, although I fancy there may have been a few such cases. And there is no instance, I am convinced, nor will there ever be while competitions are promoted by sound-headed men, of the guarantee being given that the assessors' award shall be binding in respect of the commission. In spite of this bland indifference of our avowed and advertised principals on the subject of competitions, do we depreciate these competitions by standing apart, or are we not rather to be held accountable for the existence of such conditions by our persistent and boisterous participation in them.

The 5 per cent. commission is stipulated to include quantities or extraordinary expenses in 16 per cent. of competitions. The premiated drawings are to be the property of the promoters in 77 per cent.; the written rules and the unwritten rules of the profession are frankly ignored, and we give our approval to this state of affairs in the most emphatic manner possible, and proceed to keep this monstrous thing alive and healthy amongst us, in the face of rebuffs and affronts.

The very assessors who are selected from the pick of us to advise the promoters, themselves become parties to and elaborators of these very usages which we have never found words enough to deplore and execrate.

It has even happened that architects and members of the Institute have acted in the capacity of assessors in competitions where the conditions were not in accordance with the suggestions for competitions published by the Institution; and in thirty-two sets of conditions of competition, which I took as they came to

hand from the portfolio kept at the Institute library, I find that out of the twelve cases which provide for the appointment of an assessor, no less than eleven stipulate that the premium shall merge in the commission, that ten state that the premiated designs and drawings are to be the property of the promoters, and that in every single case there is an express clause relieving the promoters of responsibility to accept the prize designs, and in one instance of a competition for a 5,500*l.* building with a first premium to merge in the commission, it is stipulated that the 5 per cent. commission shall include travelling and all expenses.

Is it not, I will not say reasonable, but the only conceivable result, that promoters of competitions should treat our wordy protests with small consideration, as evidences only of professional jealousy and professional squabbles, when our weakness, our inconsistency, and our scrambling greed is so flagrant and so palpable a denial of all that we say.

What I wish to lead up to is the conclusion that the impracticable and unfair qualities of public architectural competitions as now conducted are not to be laid to the charge of the people who promote them, but are to be entirely laid to the charge of ourselves who have in all particulars and details made the procedure, traditions, and the conduct of competitions just exactly as they are and exist, in every respect and in every particular.

There is nothing unusual or difficult in our situation at the outset. We are dealing with ordinary business men of our own nationality, whose prejudices we thoroughly understand, and who are bound by the same laws as bind us. There is the fair commercial battlefield before us.

When a man or a corporate body—it does not matter which—wants a thing it is his reasonable duty to get it at the fair market rate, and to give no more for the thing he wants than what it is worth. I cannot see why British subjects or, indeed, anyone else ought to be placed under an obligation to reconstruct the ordinary bases of business transactions because they may happen to be dealing with the profession of architects. The attitude of these people is perfectly simple and reasonable, and is all, as business men, which we have any right to expect. They make a certain offer for a certain thing, and it is their business to see that they get what they want, and whatever they get they get at *our* price—please remember that, gentlemen—and not at any artificial price.

They get it at the market value, neither more nor less. If they choose to make an attractive offer they can command the ideas of the leading architects of the day. If the offer is an inconsiderable one, they will win only the services of incapable or unsuccessful men who value their services at a low rate, and I feel bound to confess that, as a matter of ordinary foresight, when organising a competition, knowing that the approval and gratitude of the profession at the offer of a fair premium would possibly take the form of some 3,000 deal strainers delivered at my door, I should feel, with all the good will in the world, not justified in offering a sum involving responsibility for such an exuberant display of gratitude.

I insist, gentlemen, that the whole matter is in our hands, and that the issue is clear and easy. We have only to make the demand, not indeed in peevish letters to the papers, or on long-winded occasions of this description, but to make the demand with the ordinary emphasis of men who know what they want, and who mean to stand by the principles of conduct which they know the fulfilments of their wants demands of them.

So surely as we declare in this manner that we will be parties to no competitions of which the conditions are unreasonable, ambiguous, or incompatible with personal or professional dignity, straightway such competitions will cease to exist.

Twenty years ago some effort was made to give some real expression to the general conviction that architects should not compete where no professional adviser was employed by the promoters. I refer to the memorial signed by 1,300 architects, who bound themselves not to compete except where a professional assessor was employed, which was presented at the Institution by Sir George Edmund Street in 1881.

What generally is the result of that comparatively limited and local effort?—I say local as affecting only a certain status of practitioners. It is this: that while the Special Commission of 1872 found that a professional assessor was rarely or never employed, at the beginning of this century 50 per cent. of competitions advertised the employment of a professional assessor.

I think there is a great deal of what must appear to unprejudiced persons outside our profession as sheer foolishness and nonsense in all the outcry we make. The truth is that it is *ourselves* whom our quarrel is with, with the men who will sacrifice their dignity and walk in lower planes and work for less than what we can bring ourselves to consent to. We want the thing that is offered, but not at the price to be paid; and yet, for all our outcry anent the moral obloquy of promoters of competitions in refusing to accept a design they do not like, I have yet to hear of any case in which the competitor who unfairly was handed the commission ever made any difficulty whatever about accepting it.

From the lofty tone we adopt in these matters we should expect the favoured architect to bow, present thanks, and decline on the ground that it was a gross injustice to his professional brother who had been awarded the premium, that the profession of which he was a member strongly disapproved of such irregularity, and that, therefore, he must decline to act.

Personally, I am thankful to think that no such prig exists in our ranks, but if our attitude was really genuine towards competitions, as we declare it to be, this is the attitude we should take individually in being met with a case of that sort. But were we genuine, such cases would not arise, because we should see that the conditions were properly drawn; we should not compete unless their terms and the details of the matter were in accordance with our principles; and if any attempt was made to jockey us, we should find our remedy in a court of law. If we cannot keep off unruly competitions by any other means, by all means let us *take the pledge*—let us join a certain active society lately started, and forswear competitions unless they are as we hold they should be. My own interest in that most praiseworthy society is somewhat abated by its formidable propaganda for *talking*. We have surely had enough and to spare of that; it is entirely useless unless architects abstain from competing.

The only way to secure that competitions shall be conducted as we wish them conducted is to have nothing to do with them unless they are as we approve.

Mr. R. S. Balfour read a letter on the subject which had been received from Mr. Sidney R. J. Smith. Mr. Smith said he had little to say on the subject, except strongly to urge the abolition of perspectives. They were quite useless to an assessor, and should not be necessary until plans were finally decided upon, for in a competition they misled committees. He was of opinion that a small piece of ½-in. scale drawing was much more useful, for it showed what a competitor's capabilities of design and feeling were much more than a perspective or ⅛ scale. In a general way, $\frac{1}{16}$-in. scale and a small piece of ½-in. detail should be ample for competitions, and plans, one elevation, and a section should be sufficient. The great thing was to minimise labour. He was strongly in favour of the jury system; there should always be more than one assessor, for if there was only one he might have "fads" or might miss points. He was sure that two men—one a practical man and the other an artist—would work better than only one. Reports were practically useless, and might be abolished with advantage. A few notes on the drawings were all that was necessary, and this should also be ample as a specification. Limited competitions, each competitor being paid, should be encouraged, or competition abolished altogether.

Mr. H. W. Wills, in proposing a vote of thanks, said he had listened with great pleasure to Mr. Creswell's paper, but he thought he disagreed with every sentence of it. Mr. Creswell had shown, in the preparation of his paper, and the collection of facts, an industry greater than that of the ordinary competitor. Many of them were able to get through a set of competition drawings in far less time than it must have taken to get together such a mass of statistics, the correctness of which he was perfectly willing to take as absolute. Those who decry architectural competitions should remember that though we might do away with them we could not do away with the competition between man and man. If an architect did not get a practice in some other way, he went in for competitions. If he did not take part in architectural competitions he tried to attract the attention of, and please, those who had work to give and really competed for their favour, suiting himself more or less to his surroundings; and in many cases a man who got a practice in that way spent quite as much time in building up his practice as did the man who made competitive drawings. If he wanted to know whether the bite of a dog was a bad thing he would never go to the man who had never been bitten, but to the man who had had experience either as a doctor or as one who had been bitten. They could apply that to the architectural profession, and think of those who, like Mr. Aston Webb, Mr. Hare, and others had competed so successfully; if they did that they would not take such a gloomy view of the matter as did Mr. Creswell. Of course, there were a great many defects which needed remedying in the present system, and he thought that a great many of them would pass away in time. Competitions were now conducted more fairly than ever before, and improvement was still taking place. He was heartily in agreement with Mr. Cross's admirable paper. One of the greatest sources of disappointment architects had in competing for a building was when, having been placed first by an assessor, the promoters changed their minds, saying that perhaps they might put up the building in ten years time, but perhaps they might not do so at all. Supposing a building was going to cost 80,000*l.*, and the promoters came to that conclusion, the successful architect would have probably expended an amount of time in preparing a design quite equivalent to the amount of time he would have spent had he been directly commissioned to prepare preliminary sketches. Competition drawings were fully equal to preliminary sketches, and he thought that one of the conditions of a competition should be that if the promoters did not erect the building, or did not accept the author of the first premium as architect, they should pay a percentage on the estimated cost of the building. If a condition of that kind could be arranged for it would do away with a great many bogus schemes, for people would not, merely for the sake of a building they only half-heartedly wanted, run the risk of the certain payment of a large sum of money. If, instead of only having to pay a premium of 100*l.* and then employing another architect, or no architect at all, they had to pay a sum seven or eight times as great, promoters would think a great deal longer than they did before they reversed an assessor's award. He thought that was one of the reforms which might very well be brought about. Another misfortune architects were sometimes subjected to, even where an assessor was appointed, was when it was clear from the conditions that neither the assessor or the promoters knew exactly what they wanted, and he thought architects should avoid, as far as possible, competing for buildings the exact nature of which was not clearly stipulated; and assessors would help to make competitions more successful if they insisted on the problem to be solved being clearly and definitely stated at the outset.

Mr. W. H. Seth-Smith, who seconded the motion, said he was very glad Mr. Creswell had dealt with principles. A great many of the matters referred to by Mr. Creswell were purely incidental, and accidents of practice—miscarriages of justice, little things which were inevitable while human nature is human nature and architects had to compete because promoters would have a competition, and assessors were not infallible. But there were principles which should govern things, and there were reasons which made competitions essential to architects; and, in his opinion, there would be no diminution of architectural competitions; all they could do was to regulate them and stop the abuses. In spite of what Mr. Creswell had said, he did not think any one would deny (except, perhaps, Mr. Creswell) that great progress had been made in regard to architectural competitions, which were arranged and carried out much better than they used to be. He had not been one of the very successful men in them, but, at the same time, he felt that the competitions he had been in for had been of distinct benefit to him and his staff, and he would have nothing but praise to give to the system if it could but be regulated better than it is regulated now. They were members of the Anglo-Saxon race, which

delighted in competition. Why were they architects? He did not at all take the view that they had taken up the profession mainly for commercial reasons, but rather that they were architects for the sheer joy and delight of designing. They talked about themselves as if they were artists, and he hoped they were, and that they had that ideal before them; and they were not worthy of the name of architects unless they had that ideal and did all they could to promote it. The main stimulus in architectural competitions, so far as the profession was concerned, was the sheer delight of designing. Mr. Creswell had laid great stress on the unsatisfactoriness of competitions—that the intellectual competition was of no use to any one; but surely if physical competition was beneficial, intellectual and artistic was still more profitable. The main point was, not did competitions benefit the profession, but did they benefit art? Were the public buildings which were erected in England to-day of a better quality than those erected twenty-five years ago? He could not help thinking that there was an enormous improvement in the buildings of the country, and he thought that must be attributed to a large extent to competitions. Great strides had also been made in the regulations as to architectural competitions. The suggestions of the American Institute were extremely valuable, and if we could (and he thought we should) arrive at some kind of regulations on those lines, he thought we should have achieved nearly all that we needed.

Mr. A. B. Thomas, in supporting the vote of thanks, said it was always interesting to listen to an academic discussion on the merits of a recognised system or method of practice which had grown into general use; and it was a fact, although he did not mention it as an argument, that the majority of the great names which stood out in the architectural world had identified themselves with competition work and, he believed, without detriment to their work as architects. There was one important point to bear in mind *i.e.*, that a public authority having the control of the expenditure of public money, was bound to take the course which seemed to them best in the disposal of that money. While it was open to the public authorities to call in a specialist eminently fitted to deal with a particular work, they could, and sometimes did, appoint an architect whose chief recommendation was his local influence, more than his artistic or special capacity. On that ground it could be claimed for competitions that they were in the interest of architecture, and they were certainly in the interest of public money in that a properly conducted and properly assessed architectural competition should produce a design which, while not necessarily the least costly, would be appropriate and therefore properly economical. In regard to the paper by Mr. Cross, it was definitely laid down that the assessor's report should be printed and supplied to the competitors. That was generally contended, but he was not quite sure as to the wisdom of that. It was desirable that the assessor's award should be absolute, and where that was so it was undesirable to give the reasons for his conclusions. In legal absolute decisions, he believed that that was the practice. One could imagine the difficulties which might arise from the publication of an assessor's report, and, in his opinion, it was best that the assessor should clearly and definitely say which design he thought was the best, and that that should end matters so far as the competitors were concerned. Then as to the simplicity of drawings, that lay with architects themselves, most of whom would make their drawings elaborate, and take a pride in doing so. As to what Mr. Cross said about competitors privately communicating with the promoters of a competition in order to get information, he (the speaker) had been under the impression that, as a rule, the promoters took great trouble to supply the fullest information. The consideration competitors received from the authorities, the expense and trouble that was taken to supply information, was, in the majority of cases, very great; in most cases the promoters seemed to have a great desire to help the competitors all they could, and to secure anonymity He did not at all see how it could be expected of promoters to say definitely before a competition was adjudged that they would carry out the selected design. He had known a case where the promoters of a competition were absolutely prevented carrying out a design after it had been selected, and it would have been very hard on them had they been bound in any way. As to the conditions of the competition forming a basis of contract, he took it that they did. As to assessorships, he felt he must put in a plea for sole assessorships, and while he was listening to Mr. Cross he was thinking of the result of competition work in England, and contrasting it with the results abroad. In France and on the Continent, especially in regard to municipal work, one saw a great similarity in the designs selected for Hôtels de Ville; on the other hand, in England during the last ten years there had been considerable individuality shown in the selected designs for town halls, and he could not help thinking that this result was not only due to the individuality of the designers, but also to the taste and individuality of the assessors.

Mr. W. A. Pite also supported the vote of thanks, remarking that there was evidence of competition among people everywhere, and on the whole it seemed to be best that such should be the case. Many architects would never get a chance of designing buildings of any magnitude but for competitions, and as to whether the system benefited the art of architecture, it was only necessary to call to mind the names—the honoured names—of men they all knew, some of whom had stepped, so to speak, from a back office stool into the very front rank of the profession. Then there was another point: somehow these competitions seemed to stir one's zeal. Whether that was because of the sporting element in it all, he could not say, but it certainly seemed to make young men work for the best results. They had met that evening in order to discuss, to some extent, their wrongs, and they hoped soon to set matters right, though there were many reforms they wanted, and perhaps it was hardly possible to get all they wanted. Arising out of what Mr. Thomas had said, he might mention that there were competitions in which the assessor was told of a certain building which had been erected somewhere which was the key of the whole thing. If the competitor did not possess that key, he might as well not compete. Nothing had been said that evening as to the good old-fashioned "ghost" which some competitors were said to make use of.

Mr. John Murray said it seemed to be generally admitted that there was something radically wrong somewhere with architectural competitions. In his opinion, the system of offering two or three premiums was wrong, for it involved the expenditure by the profession of a great amount of time and money. If, in all competitions, small scale pencil sketches were asked for, young and old, and busy men could compete without a large expenditure of time and money. Say fifty or even 100 men competed by sending in small-scale sketches, about six might be selected for a second competition, and each be paid an equal sum to cover expenses. By the present system fifty or sixty men might compete, and the assessor at once eliminated about two-thirds of them because they had not carried out some leading point, which, perhaps, was only known to the assessor or committee; and it was a great hardship that a number of men who had gone to great trouble and expense were put out of court for such a reason. If the system of small-scale sketches were general, such sketches could be made in a short time without much outlay, and an assessor could judge at once upon a scheme. It was a well-known fact that the general scheme of the plan often won a competition, and that scheme was often worked out by the first few lines. That had been his own experience; some schemes he could have prepared in two or three hours had he followed out at first the correct idea, but in consequence of doubt he had spent two or three months of fruitless effort upon the work. The reform necessary to make competitions successful and a benefit to the profession might be carried out on the lines suggested. The suggestion was not new; it had been adopted in some of the largest and best competitions, and in all such cases, as far as he knew, the result had been most successful. If the Institute were to lay down suggestions on these lines, there would be good results. He thought that the one assessor system was the best, providing that in the event of the promoters not carrying out the selected design, the author of that design should have some compensation. It seemed a great hardship that a successful competitor should lose everything because the promoters wished to have some other design, generally not so good; but the promoters ought to be quite free to select another design if they wished. A substantial compensation to be paid to the successful competitor would, however, act as a considerable deterrent to such a course. The remedies for the existing defects were in the hands of the profession, and unless architects, headed by the Institute as the governing body, lay down some rules for themselves and adhere to them, things would go on as before. No doubt matters had improved, but there was need of more improvement.

The Chairman, in putting the vote of thanks, said they would all regret the absence of the President, Mr. Hare, because of his great success in competitions, and because he would have been able to tell them practically all about the matter. It seemed to him (the speaker) that as we are not likely to do away with architectural competitions, we might as well accept them and devote our energies to improving them where we can. Every one seemed to agree that improvements must come from within the profession, and Mr. Creswell, who did not seem to approve of competitions, was in agreement with others, he thought, on that one point. He would like to draw more attention to the Competition Reform Society than had been given to it that evening. The Society was doing a great amount of good, and it was by joining it and by trying to get promoters of competitions to draw up their instructions and appoint assessors, &c., as architects desired, that improvement was to be brought about. In joining the Society—in taking the pledge, as Mr. Creswell wittily put it—they agreed to abstain from taking part in competitions which were not considered fair or were not approved by the Society. It seemed to him that Mr. Wills did not so entirely disagree with Mr. Creswell as he said he did, for there seemed to be agreement between them on one or two points. He (the Chairman) thought that the competition suggestions should form part of the contract, and also that the drawings should be as simple as possible, to as small a scale as would illustrate a design of a general scheme, without perspectives, and with only one section—and that a skeleton section, not a detail section. He also considered that the assessor's report should be supplied to competitors, for one could learn very much from the assessor's criticisms and the comparisons between one's own unsuccessful design and the others. He was sure that competitions were desirable for young architects, and he thought that they learnt much by competing. As to whether competitions improved the art of the country, he rather agreed with Mr. Seth-Smith that they did, and had. One could not go about the country without realising that, and in looking at the competition designs published in the professional papers one realised that the standard of art had improved; and there could be no doubt that some of our finest buildings were the result of competitions. As to payment to the designer of the plans placed first, he thought that Mr. Wills's suggestion was an excellent one, though he was afraid it was rather too utopian for realisation. He did not think committees would be got to pay the author of the design placed first 1½ per cent. on the estimated cost of a building if they abandoned the scheme; the first premium was generally so very much less. He did not agree with Mr. Thomas's suggestion that a committee ought not to be expected to bind themselves; on the contrary, he thought the committee should bind themselves to carry out the selected design, or, at any rate, one of the three premiated designs, unless, of course, there was some legal difficulty in the way, or the committee, as Mr. Thomas mentioned, were unable, through no fault of their own, to carry out any design; but that could always be stipulated. The practice of merging the first premium in the commission ought to be a thing of the past. It was really only a mythical and evanescent premium. An amusing case occurred in his experience recently. He was asked to compete with five other architects for a small building in the country, and a first premium, amounting to 3 per cent. of the cost was offered. He thought this read very well indeed, but in the next sentence he found that the first premium merged in the commission. It was quite true, as had been stated that evening, that there was a key to the problem set in some competitions which, unless one could find it, made it useless to compete. A notable recent competition was practically a puzzle, and only one of the competi-

tors guessed the solution, and he believed that that sort of thing had occurred more than once.

The vote of thanks having been heartily agreed to,

Mr. Creswell, in reply, said that he liked Mr. Pite's remarks about the sporting element in competitions, and perhaps it was that element which induced men to compete. He met a curious instance the other day. A friend of his in a large provincial town—a young man in a good position — was approached privately by a member of a School Board which wanted a school. His friend was asked how a competition should be managed, and of course he spoke up for the Institute suggestions, and said that an assessor should be appointed, and pointed out emphatically that the profession expected that the architect selected by the assessor should be appointed to carry out the work—the premium was nothing, the appointment of the successful architect was the real thing. His friend and perhaps thirty other architects competed, and the assessor made an award which the Board did not approve of, and they selected another design—a very fine design, in Portland stone, of a two-story school. This happened to be his friend's design. The selection was entirely accidental, and his friend was charmed and delighted, as, of course, was quite right. His friend was a man of great resource, and the curious point was that in getting out the contract drawings he adopted a design which was entirely different from the competition design. The original design was a stock competition design, in Portland stone of two stories. It was a distinct competition design, the regular thing in that line ; but the building that was put up was of one story in red brick with Bath stone dressings. The grotesque was not limited to small competitions. Important competitions often condemned themselves. There was the Law Courts competition, for instance, and Sir Gilbert Scott's Treasury building. The Chairman had said, with some hesitation, that Mr. Creswell did not seem to approve of competitions. That did not appear to be the question, but whether competitions were a good thing or not. Whether they were good or bad did not affect the question of whether he would personally compete or not ; he did not think the moral obligation had reached that point. But if he competed in face of the condition which said : "the Council do not bind themselves to carry out the design which is accepted," he would not write to the *Builder* and complain if he did not get the work to carry out. To do that was, in the circumstances, very inconsistent.

Mr. Cross also replied. He said he was glad the Chairman was a supporter of the Competition Reform Society. He was sure that it was necessary that there should be some such society to deal with the wiles of promoters, for architects had been badly treated for years past, and in a measure it was their own fault. Some such combination ought to have been promoted years ago. The Institute ought to have taken up the matter in earnest, but unfortunately the subject had always been cold-shouldered by that body for some reason which he could not understand ; and so competing architects had found it necessary to take the matter up themselves in earnest. In time the subject would also be dealt with in earnest by all architects, he believed, including the Council of the Royal Institute of British Architects.

The Chairman announced that the next meeting will be held on the 20th inst., when Mr. W. H. White will read a paper on "Ancient and Modern Town Houses."

The meeting then terminated.

REBUILDING SCHEME, ST. BARTHOLOMEW'S HOSPITAL.—The Building Sub-Committee of the Lord Mayor's Inquiry Committee on St. Bartholomew's Hospital met on the 6th inst., when the Lord Mayor (presiding) announced that he had now obtained the necessary consents to his scheme for utilising the site of the chapel and the house of the chaplain for hospital purposes. It was resolved to suggest to the Governors that, in view of the changed circumstances arising from the probable acquisition of the site of the church and the utilisation of the north wing of the hospital, which contains the great hall, their architects should prepare block plans for the gradual but ultimate reconstruction of the entire hospital in an up-to-date manner, due regard being paid to the value of the ground.

ARCHITECTURE AND THE AGE.*

THERE is one weak point in the Episcopalian use of Pointed church architecture, due to the symbolism that pervades it, influencing its plan adversely. I suppose we all have had our experience of what it is to sit behind the aisle pillars of an ordinary church, or the massive crossing pillars of a cathedral, when some eminent divine was preaching whom we would much like to see and hear. In these circumstances the reflection would be quite justifiable, symbolical plan or not [the object for which I am here transcends symbolism]. The church would have better subserved its object if the obstructions had been out of the way. In this connexion we cannot help hoping that the five gentlemen who have been honoured with the competition commission to design a cathedral for Liverpool may so far turn aside from the ancient method, face the present problem, and provide a large preaching area free of great obstructive central and other pillars. This is not beyond the wit of the architectural man to devise, if modern methods of construction are adopted and the earlier modes used only so far as consistent with the advanced condition of architectural knowledge. The arbiters will be in sympathy with it, because they say the "Liverpool Cathedral must be an original work of art, and have a character of its own, one fitted for the requirements of the present age."

A large space provided at the intersection of the various parts like that at St. Paul's Cathedral would be commendable. Such an arrangement will, of course, exclude a central tower, but not prevent the use of a dome-like structure on the lines of the Ely Cathedral plan.

A most excellent suggestion made in a lecture given to the Edinburgh Architectural Association by the distinguished Professor of Fine Art at the University of Edinburgh, that the plan of a church in Cologne, apsidal in choir and transepts, might well be considered as the model of an ecclesiastical auditorium, has a distinct bearing on this problem.

Were the church for Nonconformist usage, there would be no ritual difficulty to meet. Two London churches have happily realised the expanded area by the use of the octagon on plan, and another by employing a hexagon, and, as is well known, there are churches all over the country, particularly in Scotland, which are large and unencumbered with pillars.

But in the effort to secure expansion of area, the attainment of good acoustical qualities has also to be kept in view. One of the ablest writers of the day, once a minister, and therefore an authority on the matter, has repeatedly blamed architects for neglecting this. Good reason he had, as his own church—a modern one — was a conspicuous offender, the remedy in the case being a large "velarium" over the pulpit. With the knowledge we have of the laws of acoustics given in the admirable manual of Professor Roger Smith, and the instances therein furnished of large buildings in which speaking and hearing are all that could be desired, the mistakes so often made are unpardonable, and quite unworthy of a profession living and working in an age of exact science and successful engineering and mechanism.

When such cases occur, they are due either to neglect in studying the laws which operate in favour of a good auditorium, or the designer is so devoted to precedent that he has not the courage to make the needful advance on what has been done before.

It would not be fair, of course, to condemn buildings in which a voice of low compass failed to make an impression. It is probable that hardly any one else than the late Mr. Spurgeon could have made himself heard to the utmost limit of an audience of 20,000, as he successfully accomplished in a gathering in the Crystal Palace at the time of the Indian Mutiny in 1857 ; but an architect should be able, at any rate, to design a building satisfactory in its acoustics which shall hold 4,000 or 5,000 people, as has been done, for instance, in the case of the Free Trade Hall in Manchester.

From the questions of style and ethics we have been considering, let us turn for a little to a quality by which they are all affected, one that in the present variety of practice calls for special attention, and that is the *meaning* or *expression* which a building ought to have.

It is not enough that an architect should skilfully plan and apply his knowledge of style with wisdom and taste : he has to aim that some meaning be suggested by his work. This meaning is not simply the conveyance of personality into his design. Personality is an unconscious influence, a something he cannot help imparting : we see the man in the work ; unhappily not always, for many a time an architect cares only to do what others have done, admiring their work so much that he has no ambition to create any of his own. Expression is a subtle something beyond personality, and has to be *consciously* applied.

An architect sits down to the pleasant task of designing a bank ; how is he to treat it so that it will appear as such, and not be mistaken for some other place of business ? Or his study may be a church, and as he is a man of independent mind, unconcerned for precedent of mediæval or other work, how is he to prevent his design being supposed to be that of a secular building ?

Both bank and church may be admirably designed, but, if they have not the tone we call meaning or expression, will fail to indicate their purpose. The method most generally adopted to gain this end is the addition of forms symbolic of the use to which the building is put, and this has been cleverly done at the Natural History Museum at South Kensington by using representations of some of its contents. In many of our civic edifices it has been managed by employing the armorial bearings of the city or of the county families, or sometimes by introducing pictures of historical events which took place in the vicinity. An exchange with the figure of a grasshopper on its summit may recall to the observer the name of the merchant prince Sir Thomas Gresham, and its walls be frescoed with representations of the processes of manufacture and modes of transit on which commerce so largely depends. But none of these methods of distinguishing a building can be strictly considered as expression.

Some years ago an article appeared in the *Builder* in response to a letter sent by the present writer, who had suggested that expression in architecture should be given more attention to. The article laid down in reply two points of view from which expression may be considered : (1) Either for its own sake merely as a means of heightening individuality and character in a design, or (2) in relation to the purpose of the building and as a means of expressing something of that purpose in its outward mien. Some of the ideas proposed as meeting the first point of view were consistency between the various parts in mass and detail. A steep-roofed church and spire went well together, or a flat roof and tower ; a mansion might be dignified or picturesque, provided the several parts were treated with consistency, but the mixing of stone gables and half-timbered work in the same house was not conducive to expression.

The second view might be partially met by avoiding such matters as huge masses of wall, and small slits for windows in mansions and town halls ; a court of law should not be marked by spires and towers ; a set of commercial offices ought not to be bedizened with carving. At the close of the article the writer seemed to consider that individuality would help to secure expression, and remarks it was impossible "to make any building express its purpose with such a degree of certainty that any person ignorant of this could gather it from the external aspect of the building."

These two points of view sum up all that need be said about expression : that it is a something plus individuality, and also that it may aid in indicating the purpose of a building.

That it is something beyond individuality a little consideration will show. The personality of architects is dissimilar as the trees of the forest. One is refined, another vigorous ; one architect has a tendency to breadth in his work, another to minuteness ; one is grave in his treatment, another always sees architecture in a lighter aspect. Now, either of these men may have to design buildings which call for the indication of qualities other than those of their own temperament.

The man given to fine detail, if entrusted with the erection of an edifice which should be characterised by stateliness, will have to go out of his individuality to realise such a quality, and therefore we may conclude that expression is something beyond personality, calling

* The second part of a paper read by Mr. G. S. Aitken, of Edinburgh, at a meeting of the Northern Architectural Association, Newcastle-on-Tyne, on the 25th ult. For the first part of the paper see our last issue, p. 248.

for the use of conscious exertion and the reasoning faculty. To many, of course, this counsel is needless, habitually in designing work they ask themselves the question, now, what character beyond my own personal faculty of expression am I called on to impart to this building? and hence the greater success of some buildings than others in attaining that end.

It may not be always possible to learn from the external appearance of a building what object it serves, yet we may ensure it some degree of meaning by keeping in view the purpose it is intended for, and what of composition and detail are likely to accentuate that. A bank should have an expression of solidity to indicate security, its entrance ought to be spacious enough for its business purpose, but not so large as the door to a hospitable interior; its decoration should be grave and sumptuous rather than ornate, the material used ought to be of the best, and the nationality of the bank be hinted at by the use of granite if its head office is in a granite district, or marble if it has foreign connexions, and so on. A happy illustration of this is to be noted in Mr. Norman Shaw's shipping offices, at Liverpool, the intermixture of marble there at once carries one on an imaginary voyage to other lands.

A geological museum would be very one-sided in its recognition of the materials which illustrate the science it is devoted to if it were built entirely of one kind of stone or of brick. Terra-cotta associated with stone, both varied in kind, would suggest to the onlooker the differing geological leaves of the earth's volume.

A church should be both cheerful and grave, leaving lightness to the concert hall, arranged internally in such a way that the congregation may follow the reading and singing, and the minister be able to see the whole of his audience.

But expression implies not only indications of the purpose of a building, but something imparted to it equivalent to the moral qualities in man. The human eye may flash indignation or beam with gentleness, the lips may signify firmness or laxity, so may a building be dignified or mean, graceful or clumsy, thoughtful or commonplace.

Happy is the architect who has all this in view, and beyond it puts into the building his own personality.

We are not this evening compiling an encyclopædia of modern architecture, but touch only on those examples of our time that will serve either for counsel or congratulation, and therefore do not discuss schools, hospitals, asylums, free libraries, and so on, although they are chiefly creations of modern times. It would be wrong, however, not to say that they each in their own way, as much as the other classes of architecture treated, show skill and scholarship.

In passing, it is interesting to reflect how much the architect has been indebted to others for the success with which he has been able to carry out his work. The specialist has discovered there is a curative power in well-designed architecture, and hence the service it performs in asylums and hospitals. It would be interesting to know who was the first to depart from the quadrangular plan of infirmary which held good up to fifty years ago.

For the modern system of school planning we shall not go wrong in giving the credit largely, if not exclusively, to architects working out the Education Act of 1870. In this, as in other branches of architecture, many minds have been at work; the oculist is concerned about the aspect of light in which the young scholar works, the educationalist is authoritative on the various grades of division for which the architect should plan; and it is possible that the present commission on physical culture may issue in some further changes in school construction.

There is one phase of social life that largely fills the view at present, to which it would be unpardonable not to refer, in which architecture is likely to play an important part, and that is the scheme of the "Garden City." It promises to help in the dissolution of the evils attending city congestion, and to place the worker in the happiest possible material condition. While the scheme is as old in this country as the erection of the village of Saltaire, the present idea is to avoid the street arrangement that largely prevailed there, and surround the houses with garden space. To this end the architect may do much to construct houses varied in type, economical, and pleasing.

It is more than half a century since Saltaire was begun on several acres of pleasantly-situated land that had never known a dwelling-house.

A splendid mill, the pioneer of wide-spanned bays in which the older forms of heavy cast-iron beams was superseded by those of lighter construction, devised by Sir William Fairbairn in wrought iron; the mill and all the other buildings in the village being designed by Messrs. Lockwood & Mawson. There were rows of two-story cottages, a Congregational and Wesleyan church, mechanic's institute, high and technical schools, and public baths and hospital, a park covering 14 acres; many of the cottages had gardens, and there were besides 200 allotment gardens let to the cottagers.

For this humanitarian attempt to improve the sordid condition of workers who, under other auspices would have had to live in large towns; Sir Titus Salt deserved all the honour conferred upon him.

At the end of the half century a further step has been taken which seeks to place the workman in still more rural conditions, and provide him as much as possible with some of the amenities which the dwellers in country mansions possess—ample gardens and plenty of verdure. Here the principles of sociology have justified themselves, the scheme is an advantage all round; the employers have contented workmen who enjoy the prospect of continued good health, longevity, and the certainty of a happy mental life. "Bournville," which stands for this description, is the work of members of the "Society of Friends," a sect which has always been foremost in efforts to improve the condition of their fellows.

William Allen, I may remind you, the founder of Allen & Hanbury's, and a member of the Friends Society, was constant in his efforts during the end of the eighteenth, and beginning of the nineteenth century, to carry out similar beneficent views. He was on friendly terms with several of the reigning European monarchs of the time, whom he regularly visited, seeking to interest them in the abolition of slavery. It is true he did nothing like the work at Bournville; his business did not call for it, and he would have been in advance of his time had he done so.

Port Sunlight is the other conspicuous instance of the present day, and the very name has a benediction in it. We seem to see the village with its varied picturesque buildings and church in perpetual sunshine. Here different architects have been engaged with the most pleasing results.

These are not garden cities in the sense in which the new scheme called the "Garden City Pioneer Co." aims at; but as Mr. Cadbury says with regard to his system at Bournville, "it would be the greatest boon to the toilers of this country if it could be carried out to any large extent."

The idea, chiefly philanthropic, is full of promise for the future welfare of the people, pleasant natural surroundings, well drained streets and houses, comfortable homes, and at a distance from the smoke, dust, and turmoil, of the city or large town. These are conditions in which the architect will be expected to do his part, and find more than academic interest.

In a general survey of our subject, it will only be right if we recur in a few sentences to the question of styles with which we began, assuming that we need no longer concern ourselves with any discussion on their respective merits. It is not likely the old war cry will ever be heard again, the change that has come over the views of the older practitioners in favour of eclecticism may assure us in that, and perhaps if Mr. Street had lived, his superabundant vitality in the practice of pure pointed architecture would have tended in his mellowing years towards some favourable recognition of the value of the Renaissance. Had this happened, he would have been like another of the successful living architects of the day who began his career as an ardent Gothicist.

I remember a lecture he delivered, in the course of which he compared a Gothic front with a Classic portico that stood about a stone's-throw from the place where the lecture was given. Its columns he considered useless, and the shade they threw on the wall behind an offence.

He has been so consistent in his opposition as never to have employed anything of this nature in his works, but has not been able to confine himself exclusively to Pointed architecture as in his early enthusiasm he proposed to.

Classicism, treated with Gothic feeling, has forced itself upon him, which shows that however resolute, an architect cannot work apart from the forces of artistic evolution. The two styles are founded on eternal principles impossible to ignore.

The position seems to stand thus at the present day, in all buildings except churches the Classic style is either used in its Palladian form, or that of a version inspired by Gothic feeling; in other words, we are working in a time of compromise. If a new phase of style is to appear, it will be by unconscious, not deliberate effort, and it is a great mistake some practitioners have made in ignoring principles of construction altogether, in their endeavours to devise something new, inverting or exaggerating architectural forms and indulging in a general topsy-turveydom. Such work cannot last, unacceptable at present, it will be increasingly disliked as time goes on, and run the risk of obliteration some day.

If there is to be a new version of architecture it may come by the fusion of the great principles formerly referred to, and the union of the two forms of Classic and Gothic detail. The latter was foreshadowed in the Elizabethan and Jacobean days and the times of French and Scottish Renaissance where details of the two styles are so far successfully intermixed.

This phase has been extensively revived in civic and domestic architecture in recent years, but intermixed detail is one thing, and the avoidance of violated principle is another.

The Classic pediment exactly suits its columniated substructure, and a Gothic gable its traceried fenestration, but it has yet to be proved that a steep gable and a flat pitched one can dwell in esthetic harmony together.

It is sincerely to be hoped the new version will arise, for, notwithstanding Ruskin's strong bias in matters architectural, the undertone of his writings was always sound, and when he says ("Modern Painters") "that none was ever truly great but that which represented the living forms and daily deeds of the people among whom it arose; that all precious work records not the past but the present," the import of the passage may be applied to architecture as well as painting. The only truly great architecture is that which is the creation of its own and not of another age.

The present day architect has much to help him in the direction of fresh conceptions, new materials are being constantly presented to him, new compounds of old ones, devices for the increase of comfort and conservation of health, new problems in plan arrangement for buildings devoted to the care of mental and physical disease, to religious or mental culture, to buildings for legitimate amusement, or for arduous study.

The architect as well as philanthropist is concerned in city slum problems at the one extreme, and in the many forms of art applied to the town hall, mansion, and cottage at the other, the judicious study and working out of which materially contribute to the mental health of a people by giving them satisfaction and comfort.

What an effect a well-planned house has on the life and temper of the inmates, and how great the responsibility of the architect in this matter. He may by negligence or incapacity affect the happiness and well-being of generations of people and their influence on others.

The church architect has also much in his power, a congregation is not so largely the subject of spiritual influence as to be untouched by the architecture of the building in which it assembles. The church may be plain, if so, good and well, no harm is done; it may be sensuous, and the balance is towards what may unduly affect the emotions at the expense of the intellect. Or it may be bad architecture, and the man of taste suffers irritation, and is adversely influenced as an auditor.

But what of the preacher? he, too, as a being subject to like influences, may be mentally depressed or raised. If the building is not properly arranged as an auditorium, and with an absence of the objectionable, the value of his work must be affected.

How needful, therefore, for the architect to be a man of culture, that he may have a mind open to all claims upon him and the best way to meet them. A man of taste, that he may do the right thing, whether in the use of form or the application of colour. A man of some

degree of personality, that he may, avoiding the slavish copying of past work, give the world the best of his own.

An alert man, ready to use the new inventions, taking care to do this with a well-balanced mind. An enthusiast, in favour of all that is good in the old, and yet looking forward to what may come, as well as backward to what has happened.

A man in sympathy with the great students and thinkers who are able to influence his labour more than many seem to consider. One, thankful to all the great art writers who have worked in the right spirit, although he may not agree with all their conclusions.

Seeing poetry in his art, that gives it proportion, grace, and lovely colour, as well as the prose that ensures stability of construction and consideration for the material needs of man.

In sympathy with Nature if he would have his work full of perennial freshness, and seeking to become master in the knowledge of those principles by which through the Creator the world lives, moves, and has its being, so that they may have an influence on and find a place in the work he brings into existence.

ARCHITECTURAL SOCIETIES.

NOTTINGHAM ARCHITECTURAL SOCIETY.—The President, Mr. Arthur Marshall, A.R.I.B.A., took the chair at the annual dinner on the 4th inst. of this Society at the Victoria Station Hotel, the vice-chair being occupied by the Vice-President, Mr. A. W. Brewill. The company included Mr. T. Butler Wilson (President of the Leeds and Yorkshire Architectural Society), Messrs. A. Brown (City Engineer), F. B. Lewis (City Architect), H. Vickers (President of the Nottingham Master Builders' Association), H. G. Watkins (Hon. Secretary), and others. The toast of "The King," proposed by the President, having been duly honoured, Dr. Boobbyer, Medical Officer of Health, gave the toast of the evening, "The President of the Nottingham Architectural Society." In the course of his remarks, he said that a great deal had been said about education, and he felt convinced that it was to education they must look for the maintenance of our position as a nation as well as for the regeneration of the unfortunate people who inhabited our poorer districts. Education and the housing problem were inseparable. He was struck with the absolute necessity of education in the training of the reasoning faculties and instruction in certain rudimentary essentials before anything better could be hoped for at the present time. The architectural profession, the municipality, and all who had the interests of the people at heart must try to bring about their amelioration, to which we were all looking forward in the future. The President, in returning thanks, referred to the importance of the Society to architectural students and the advantages it offered to them. Some of the most successful architects of the day had been students connected with the Society. Proceeding, he welcomed the presence of the President of the Leeds and Yorkshire Architectural Society. He referred, in conclusion, to their Honorary Secretary, Mr. Watkins, of whose services he spoke in appreciative terms. The toast of "The Visitors" was proposed by Mr. E. R. Sutton, who mentioned in the course of his speech that the Nottingham Society was the oldest Society allied with the parent Institute. Some of the founders of the Society were still among its members. Mr. Butler Wilson, President of the Leeds and Yorkshire Architectural Society, replied. He might, he said, speak about secret commissions and registration, but there was a skeleton in everyone's cupboard, from the Cabinet Minister to the crossing-sweeper. He claimed for the Royal Institute of British Architects that it had done more for the architectural profession than had any other society or institution, and he was convinced that with the assistance of allied societies such as the Nottingham one it was the one hope of architects as a body. The most reasonable form of registration was the securing that every architect, however recognised, should be a member of that great body. Proceeding to speak of architecture in relation to history he said they went hand in hand, and referring again to the Society, he emphasised the importance of unity and the establishment of a complete body of men pledged to secure a high standard of architecture. If they supported the R.I.B.A. loyally and truly they would get registration in the highest form. The toast of "The Master Builders' Association" was proposed by the Vice-President and responded to by Mr. H. Vickers. The health of the Hon. Secretary (Mr. H. G. Watkins) was also proposed by the Vice-President, and Mr. Watkins replied.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.—On Saturday, last week, the Architectural Association of Ireland paid a visit to Miss Pursers' new stained glass works, 24, Upper Pembroke-street, Dublin. The manager, Mr. Child, showed them (as far as possible in the time) all the various processes, painting, aciding, staining, firing, leading, etc., which go towards the execution of a church window. A large window for Loughrea Cathedral, made in Ireland from a design by Mr. Whall, was on view as well as specimens of plain glazing for domestic purposes. The party also inspected the stock of beautiful glass of all colours and thicknesses and the various specimens of leads.

ROYAL INSTITUTE OF ARCHITECTS OF IRELAND.—A meeting of the Council of the Royal Institute of the Architects of Ireland was held at No. 20, Lincoln-place, on the 2nd inst., Mr. G. C. Ashlin (President) in the chair. A resolution was passed on the subject of the desirability of holding a conversazione before the close of the present session, and the matter was referred to a sub-committee. A report was read from the Hon. Secretary on the subject of examinations in connexion with admission to the Institute, and a committee was appointed to confer with the Committee of the Architectural Association of Ireland on the subject. A letter was read from the Master Builders' Association in reply to a communication from the Hon. Secretary on the subject of the master builders' rules with reference to tendering. The Council having fully considered the matter, directed the Hon. Secretary to inform the Hon. Secretary of the Master Builders' Association that they adhere to their resolution of February 2, to the effect that these rules have interfered with the proper discharge of the duties of the members to their clients. The Council is, therefore, obliged to withdraw the recommendation which was addressed to the members of the Institute in 1896 advising them to endeavour to comply with these rules.

EDINBURGH ARCHITECTURAL ASSOCIATION.—No. 3 of the third volume of the "Transactions" of this Association is a more valuable issue than we generally find in the publications of Architectural Societies other than the Institute. It contains a careful and well-reasoned paper by Mr. Thomas Arnold on the restoration of the Mausoleum at Halicarnassus; one on Inverkeithing and the mansion and church there, by Mr. Henry Kerr; and a very well illustrated paper by Mr. J. Campbell Irons on "The Architectural Antiquities of Leith." It is a pity, however, that the publication in "parts" is not arranged so as to take in three whole papers, instead of leaving the last-mentioned paper by Mr. Irons with its conclusion abruptly cut off.

MANCHESTER SOCIETY OF ARCHITECTS.—About 450 members and guests assembled at the City Art Gallery on Friday, February 27, and were received by the President and Council. Selections of music were played during the evening by the Manchester military string-band, and there was an interesting and representative exhibition of work by the members. Among the guests who accepted were Mr. Alfred Hopkinson, Principal of Owens College; Mr. David Morgan, President of the Cardiff, South Wales, and Monmouthshire Society of Architects; Mr. A. H. Crawford, President of Edinburgh Architectural Association; Mr. Silvanus Trevail; Mr. John Belcher, Vice-President of the Royal Institute of British Architects; Mr. John Slater, Vice-President of the Royal Institute of British Architects; Mr. J. Flew, President of the Bradford Society of Architects and Surveyors; Mr. Arthur Clyne, President of the Aberdeen Society of Architects.

ROYAL INSTITUTE OF ARCHITECTS OF IRELAND.—On the 8th inst. in the hall of the Royal Society of Antiquaries, Stephen's Green, Dublin, Mr. Percy Fitzgerald, M.A., F.S.A., delivered a lecture on "Robert Adam and his Architecture and Art." The chair was occupied by Mr. George Ashlin, President. Mr. Percy Fitzgerald said that the subject of his lecture was one of the most wonderfully endowed men of his generation, a man who was filled with the fullest artistic instinct—one of whom it might well be said that everything he touched he adorned, and one who by instinct reached things which it took others years to effect. Adam was an artist. Discussing Adam's accomplishments, the lecturer pointed out that he was first an architect who designed and built public buildings, noblemen's palaces and country houses, squares, streets, private houses, theatres. Next he was a decorator, one of the most beautiful and ornamental. He decorated his own houses. His decoration being structural and in relief—not painted—it was inseparable from his buildings, and could not be altered. His arrangements of interiors were all novel and striking—witness his wonderful ceilings, which are to-day what they were about 130 years ago. Next he was a sculptor—they knew the wonderful Adam chimney-pieces and his modelled figures for decoration. Fourthly, his iron work—balconies, railings, fireplaces—all was marked by a wonderful freedom of treatment. Fifthly, he was a great designer of furniture. Everyone knew the wonderful Adam furniture that rivalled that of the French masters under the last Louises. He devised girandoles, vases, cornices, curtains, carpets, paper-hangings. Adam was also a goldsmith, who created beautiful things in gold and silver and other metals, like the work of the old Italian goldsmiths. Further, he was a contractor on a vast scale, the work on his own buildings being carried out in a very business-like style. Also he was a painter, and did landscape and other subjects. He was actually inventor of a style of his own—a unique thing—a style that could be recognised, and had held its ground for 130 years. Not only did he form a style but he also imposed it on his generation. Adam began his labours about the middle of the eighteenth century, when the old classical style was in vogue, and his first thought was to find a new style. The lecturer then explained how Adam found beautiful buildings in the cities by the Adriatic, and by modifying their style produced that which characterises his work. Discussing Adam's style, the lecturer said he might be designated a pictorial architect. His designs affect the eye much as a picture does. Examples of his various public buildings and of his interior decoration, ornament, furniture, and metal design were then given on the screen, the lecturer remarking that in Dublin he had seen in several houses fine examples of the Adam style of decoration. A vote of thanks to the lecturer, moved by Mr. R. Carroll and seconded by Mr. Albert Murray, brought the meeting to a close.

ARCHÆOLOGICAL SOCIETIES.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—A meeting was held on the 4th inst., at 32, Sackville-street, Piccadilly, Mr. C. H. Compton, V.P., presiding, when Dr. Phené, V.P. of the Association, read a treatise on the "Civilisation of Crete, Cyrene, Corinth, and Early Rome," in which he gave the results of a half century's research in those places. The practical observations following on literary researches originated in the notice of some steps cut in the Esquiline Hill at Rome as far back as 1856, and these several localities had been examined repeatedly during the interval, as on each occasion new results came under the author's observation. The reasons for prosecuting the inquiry in those particular places were the extreme antiquity of wealthy colonisation in those districts of the Mediterranean, their freedom from political molestation, which had prevented physical destruction of the evidences of their early local work, and the peculiarity of their abundant and never-failing supplies of water, all which had attracted wealthy populations and unlimited outlay. The formation of Cyrene was most peculiar, and probably originated the other works described. It exhibited a series of uniform rounded rocky projections from the tableland northwards in symmetrical and close proximity, which gradually swelled out into successive spreading terraces, upon which roads, following the semicircular projections, had been cut in the rocky sides of each hill, which roads were reached by stairs, also cut in the rock, from the level of each road to those above them. The whole was pierced by innumerable tombs with architectural façades, sumptuous baths, and highly-cultivated lands. The evidences of high-class civilisation were shown by the still remaining engineering, not

only in the cutting of the rock levels, but in the constructions for retaining from loss the water-burdened soil in the succeeding slopes. At Corinth many of these evidences had been carried out on an enormous scale, the levelling of such soil having been extended over many square miles. The city was built upon the upper level, the surplus earth forming its gardens and fields. The art civilisation of Crete was shown by the recent excavations by Dr. Evans, while the sites of temples, carefully orientated, on the heights of Cyrene, with accounts from Pausanias and Strabo as to the art decorations of Corinth, references to Herodotus and others as to the quarternary harvests of Cyrene, in each year, proved the great results from their scientific culture. Following the rock-cut terraced roads of the latter place, Cleone, in the vicinity of Corinth, also a place of very ancient occupation, was a unique Grecian city of rock-cut terraced dwellings of ancient Hellenic masonry, occupied by the custodians of the worship of Helios and the conductors of the Nemean games, and opposite to it, on the Parnassian mountain, is the rock-cut terraced city of Delphi, occupied by the priests of Apollo, the worship in both having displaced that of the dragon and the python; and in each of these localities, viz., Sikyon and Parnassus, seats of learning and artistic scientific culture attended the change. The references to ancient Rome were historic, but in Etrurian environs two heights were specially referred to as rock-cut places of worship—the Ara Mutiæ and Mount Saraste. Finally, drawings were described exhibiting localities in Britain possessing all the examples of terraced cuttings, of successive concentric roads, with uniform and symmetrically selected levels, like those of Cyrene, mostly in the vicinity of the Icknield Way, which, from its Greek name (Icknos), a way or road, was used by the Iceni, or Ic-eni, long before the time of Cæsar, who distinctly states that the private as well as public documents in Britain were written in Greek, and refers also to the great commercial occupation of the South-Eastern region. Along the Icknield Way were pointed out great heights, evidently places of worship, while Greek and Italian names along its course, workshops, the objects in gold and enamel which have been repeatedly found, all indicate high-class civilisation in Ancient Britain. The paper was listened to by a large and much interested audience, but owing to the lateness of the hour there was no subsequent discussion.

ROYAL ARCHÆOLOGICAL INSTITUTE.—At the general meeting, March 4, Sir Henry H. Howorth in the chair, Viscount Dillon read some "Armour Notes," in which, after touching on the development of various kinds of armour, he quoted from contemporary authorities notices respecting the exterior appearance, the garments worn immediately under, and the value of armour as a protection. Instances of what the wearers were able to do, and the drawbacks connected with the use of armour, were also cited. Some of the causes of the disuse of it, owing to inferior manufacture, change of military ideas, and increased power of gunpowder, were also referred to, and the paper concluded with notices of juvenile suits and the treatment of the question as to whether the men of to-day were really unable to find armour large enough to wear. The President, Mr. Waller, Judge Baylis, Mr. Rice, and Mr. Green took part in the discussion that followed.

COMPETITIONS.

DISTRICT COUNCIL OFFICES, PONTYPRIDD.—There were fifty-five designs sent in for the new offices to be erected by the Council, and the assessor, Mr. James S. Gibson, has placed the following in their order of merit:—1st, Mr. Henry T. Hare, London; 2nd, Mr. S. D. Adshead, London; 3rd, Mr. A. Colbourne Little, London. The work has been entrusted to Mr. Hare, and premiums of 60*l.* and 40*l.* awarded for the other two designs.

EXTENSION OF ST. MARY'S CHURCH, BALHAM.—The work of the extension of the nave of St. Mary's Church, Balham High-road, is now being carried out. The work involves the bringing forward of the front of that edifice to something like 50 ft. nearer the roadway, the removal of the present transept gallery, and the provision of accommodation for about 180 more worshippers. The work, which is being carried out by Mr. Walter Wallis, from plans prepared by Mr. W. Newton Dunn, is computed to cost about 5,000*l.*

Illustrations.

MEMORIAL WINDOW, CHAPEL ROYAL, SAVOY.

THIS illustration represents the memorial window to the late Mr. D'Oyly Carte, which was fixed some little time since in the Chapel Royal, Savoy.

The wish of the subscribers being for a "musical" window, the designer selected for the upper lights the "singers in heaven," St. Cecilia, David, and Miriam, surrounded by angels singing and playing musical instruments, with a scroll running across the three lights with the text "Young men and maidens, old men and children, praise the name of the Lord, for His name only is excellent." The lower lights illustrate the words: "The singers go before, the minstrels follow after, in the midst are the damsels playing with the timbrels," this quotation being written on a scroll across the upper portion of the lights, while below the figures is a quotation from Milton's ode, "At a Solemn Music":—

"O may we soon again renew that song,
And keep in tune with heaven, till God ere long
To His Celestial concert us unite,
To live with Him and sing in endless morn of light."

The window has been designed and executed by Mr. E. J. Prest, of the firm of Prest & Co., London.

As the chapel interior is dark, the colour scheme of the window consists for the greater part of broad masses of toned white in the draperies of the principal figures, with rich colour concentrated in the purple robe of David, and in the kneeling angels in the side lights. The window is painted in the traditional manner, glass having been used that will bear firing without loss or change of colour, and without recourse to "plating."

CHURCH OF ST. MICHAEL AND ALL ANGELS, COLEHILL.

THIS small but picturesque church was built near Wimborne, from the designs of Mr. W. D. Caröe. The construction, as will be seen, is of a simple and picturesque character. The base of the nave is of brick with timber construction above, the nave arcade being also of timber, as in the case of some of our smaller ancient country churches.

CHILDREN'S INFIRMARY, LIVERPOOL.

WE give elevation and plans of the proposed new Children's Infirmary for Liverpool, designed by Messrs. Haigh & Thompson, of that city, whose plans were selected in a recent competition.

The building is designed on the pavilion plan. There are two pavilion wings, one running north and south, on the Mulberry-street boundary of the site, and the other with a corresponding aspect, parallel to the Liverpool Gymnasium, but 27 ft. away. Between these wings is placed the administrative block, facing Myrtle-street, but set well back, with the principal entrance in the centre. The nurses' home is arranged on the St. Mary's Recreation Ground boundary, but is connected with the main central block by a bridge. The pathological department is situated in the north-west angle of the site, and the boiler-house and detached isolation block between it and the nurses' home.

There are five main wards in the pavilion blocks for twenty cots each, one on the ground floor and two on the first floor for medical cases, and two on the second floor for surgical cases. In the centre of these two latter, in the administrative block, and facing the north, is placed the operating-room, with anæsthetic and sterilising rooms adjoining. The ground floor of one pavilion is planned to accommodate three resident medical officers, with sitting-rooms, dining-rooms, &c., together with the secretary's office. The boardroom and lady superintendent's quarters are situated near the principal entrance. On the first and second floors, over the principal entrance-hall, are the playrooms for children, with large outside sun balconies facing the south. The various floors of this centre block contain the clinical, ophthalmic, linen, and clothes rooms, ward kitchens, food stores, &c. The porters have their sitting and bedroom accommodation in the basement, on which floor are also placed the reception-room, dispensary, stores, linen, airing, sorting, and folding rooms, and linen and blanket rooms in connexion with sewing-room. The kitchens, larders, dairy, &c., are on the third floor, and the maids' sleeping accommodation over each ward pavilion.

The various floors are served by two staircases, one being the main or principal, in the centre of which is a large lift which travels from the basement to the top story. This lift is for the conveyance of patients, staff, cooked food, goods, ambulance, &c. The cooked food, in hot-jacketed trolleys, will be conveyed in this manner to the different wards, dining-rooms, &c. The nurses' home provides accommodation for forty-two nurses, with separate sitting and bed rooms for the sisters. An infirmary is also provided for sick nurses. The isolation block is planned for four cots, and is in itself a complete small hospital.

Generally, the buildings are planned in detached blocks, so as to ensure a perfect circulation of air all round each, and in no case will a single soil drain pass under the buildings, all being readily accessible for inspection. All sanitary conveniences are completely cut off by disconnecting lobbies. Electric light will be used throughout. Warming will be by open fires, supplemented by steam or hot-water pipes and radiators. The ventilation is to be on the "natural" principle, all windows opening and arranged so that they can be cleaned from the inside. To the buildings throughout adequate fire-escape stairs are provided. Fire-proof construction will be provided throughout the main buildings, and hydrants placed in convenient positions.

LEVERINGTON CHURCH—MEASURED DRAWINGS.

THESE measured drawings of the south porch of Leverington Church, Cambridgeshire, form a portion of the drawings for which the Pugin Studentship was awarded this year, by the Council of the Institute, to Mr. J. Harold Gibbons, of Manchester.

The porch was restored about fifteen years ago by the late J. L. Pearson; previous to that it had been almost entirely covered with plaster; when this was removed, the groining (filling in) was found to be brick, which was replaced by stone, and the tracery to the window over the entrance was removed.

The stone principals supporting the flag roof are interesting, and the traceried stone ridge is very good, and does not appear to have been at all restored.

The sketch of tower and spire is taken from the south side. The angle turrets at the base of spire are of later date and appear to have been added after the completion of the spire, probably to counteract the thrust of the spire.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—At a meeting of this Society, held at the Royal United Service Institution, Whitehall, on the 2nd inst., Mr. J. Patten Barber, President, in the chair, a topical discussion on "Road Traffic in and near Large Cities," was opened by Mr. W. Worby Beaumont, Past-President, and of which the following is a résumé:—The author first pointed out that the congestion of traffic in the main streets of London and other great cities in Great Britain had intensified to a disconcerting degree in the past few years, and none of the efforts for alleviation had had any marked effect. It would be remembered that he dwelt upon the roads and traffic questions in his address as President in 1898, and referred to changes that were then becoming inevitable in street construction and traffic methods. The time had now arrived when it was imperative that the traffic requirements must be faced by the governing authorities. A great increase in the size and number of main streets or arteries must be provided for, and every opportunity must be taken before the difficulties in the way became even greater than they were now. The difficulties relating to road traffic in and near large cities manifested themselves chiefly by the congestion or not-room-enough conditions observable every day. The cause of that was, in most places, the gradual conversion of a business and residential centre into a vast congeries of offices and warehouses, the workers in which no longer resided in the houses in that centre, but at various distances miles away from it. The people going to and from their offices, and the merchandise going to and from the warehouses, might be reckoned

The singers go before
In the midst are the damsels playing with the timbrels
The minstrels follow after
O may we soon again renew
To His celestial concert us
that song And keep in tune
unite To live with Him and
With heaven till God ere long
sing in endless morn of light

PHOTO-GRAPHIC PHOTO SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

MEMORIAL WINDOW, CHAPEL ROYAL, SAVOY.—By Messrs. E. J. Prest & Co.

praise the name of the Lord
Young men and maidens old men children
for his Name only is excellent

The singers go before

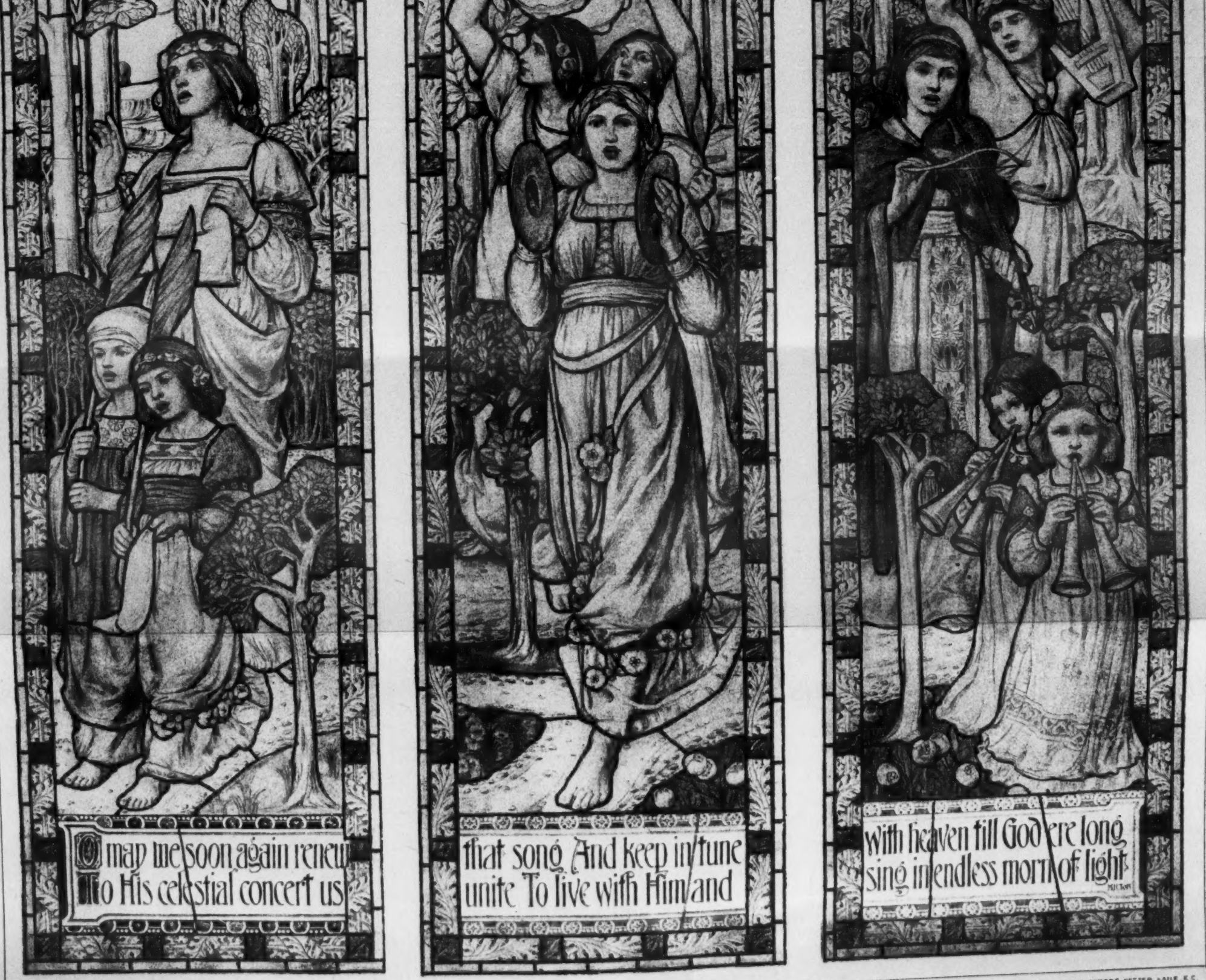
In the midst are the damsels
playing with the timbrels

The minstrels follow after

The singers go before

In the midst are the damsels playing with the timbrels

The minstrels follow after


O may we soon again renew
To His celestial concert us
that song And keep in tune
unite To live with Him and
with heaven till God ere long
sing in endless morn of light

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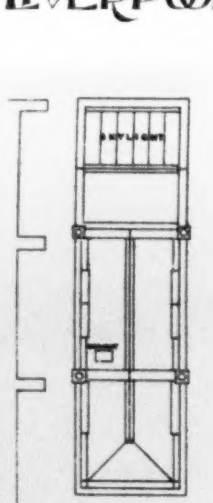
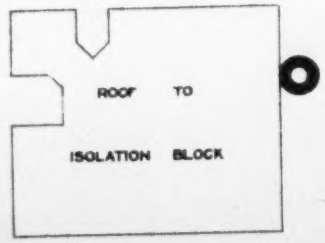
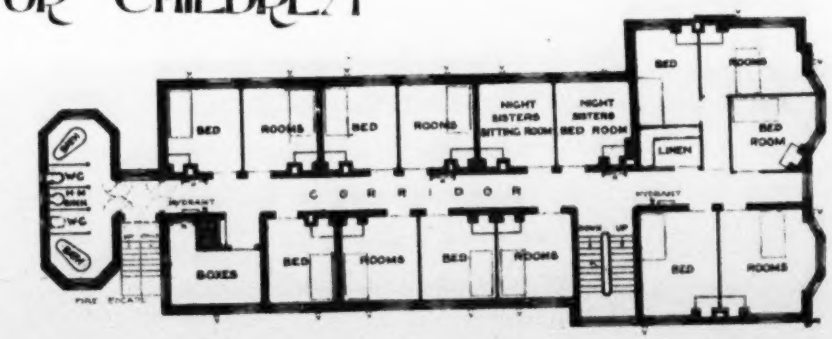
MEMORIAL WINDOW CHAPEL ROYAL, SAVOY.—By Messrs. E. J. Prest & Co.

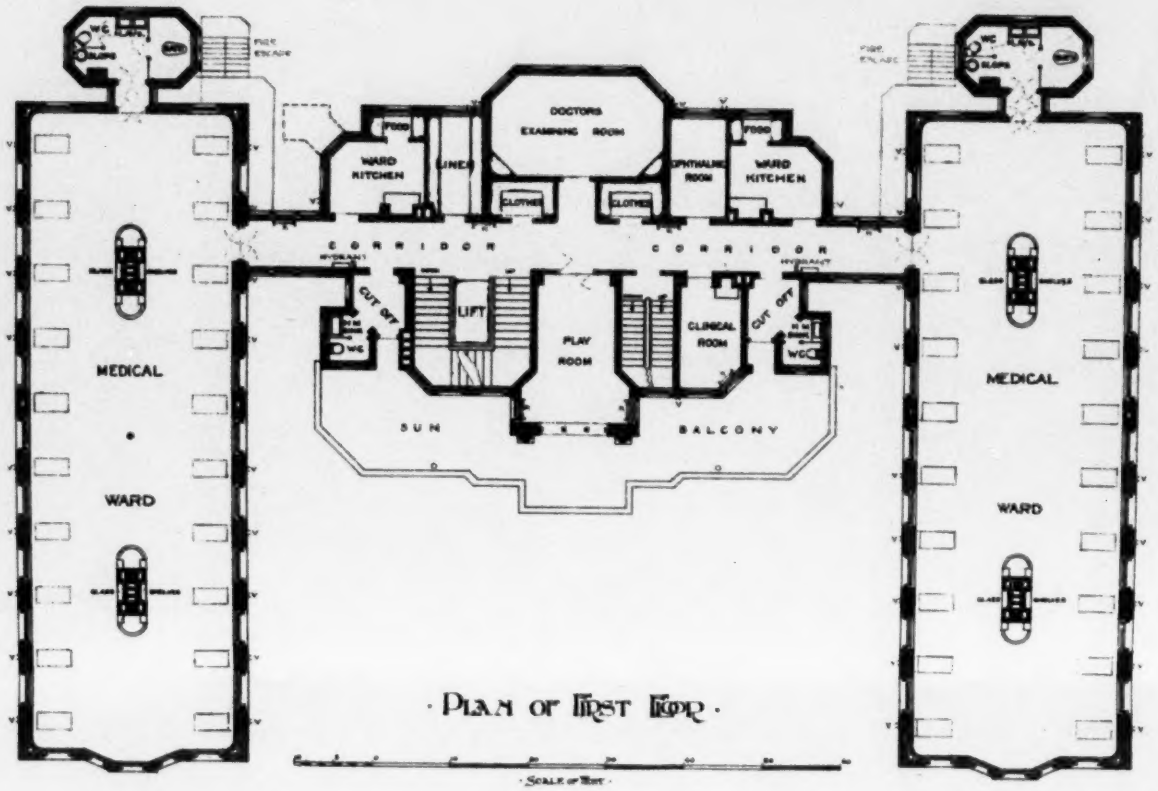
LIVERPOOL INFIRMARY FOR CHILDREN

· REVISED ·
· SCHEME ·





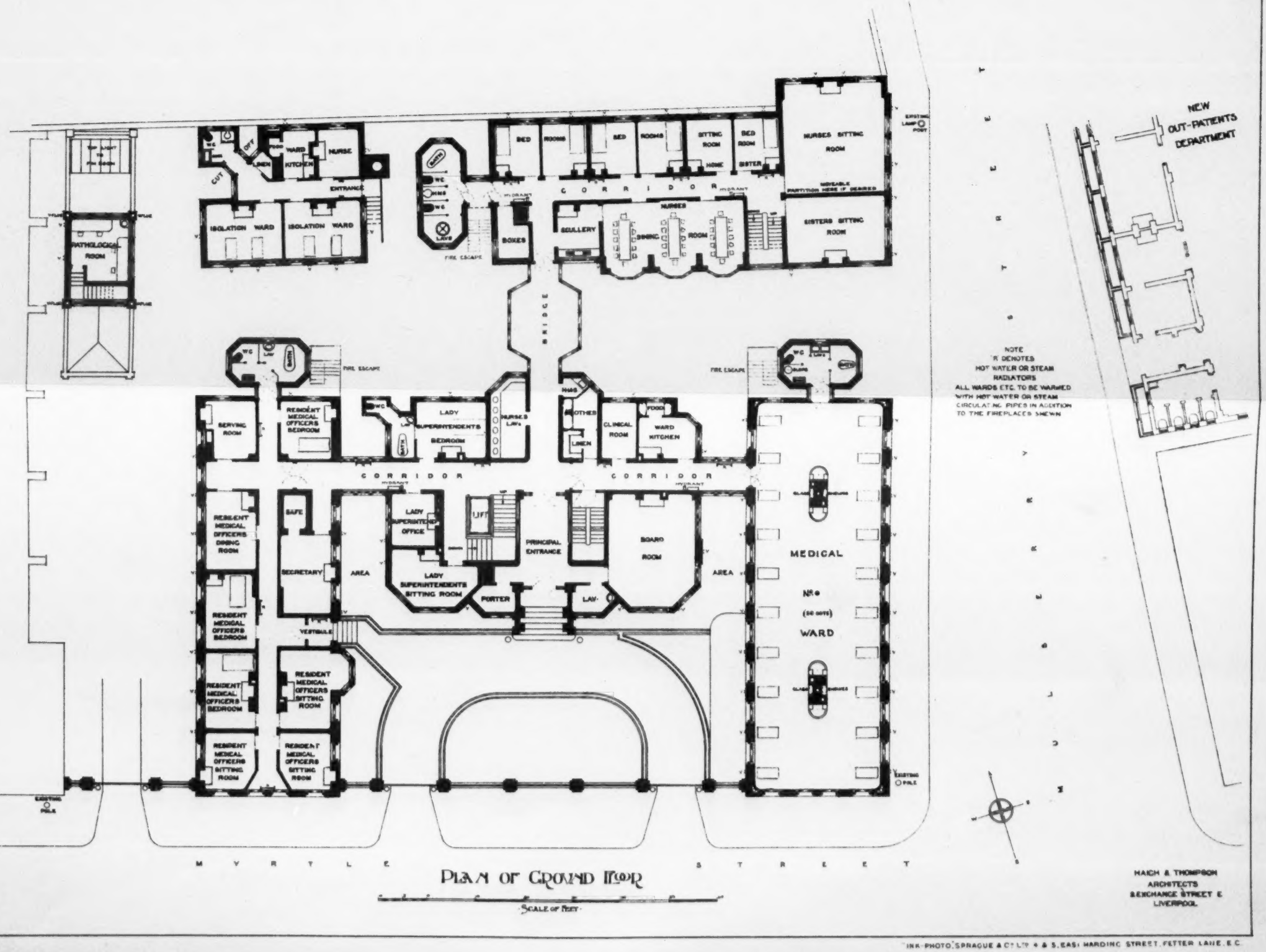




· PLAN OF FIRST FLOOR ·

· SCALE OF FEET ·

· NOTE ·
"R" DENOTES
HOT WATER OR STEAM
RADIATOR.
ALL WARDS ETC. TO BE WARMED WITH HOT WATER OR STEAM CIRCULATING PIPES IN ADDITION TO THE FIRE PLACES SHEWN.



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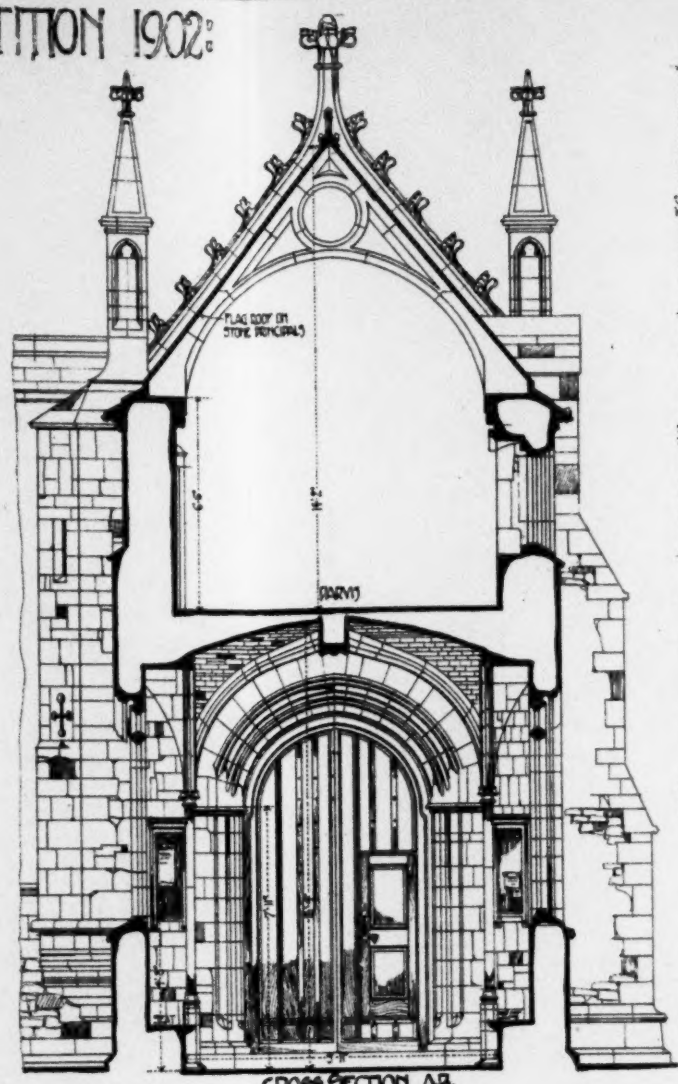
LIVERPOOL INFIRMARY FOR CHILDREN: SELECTED DESIGN.

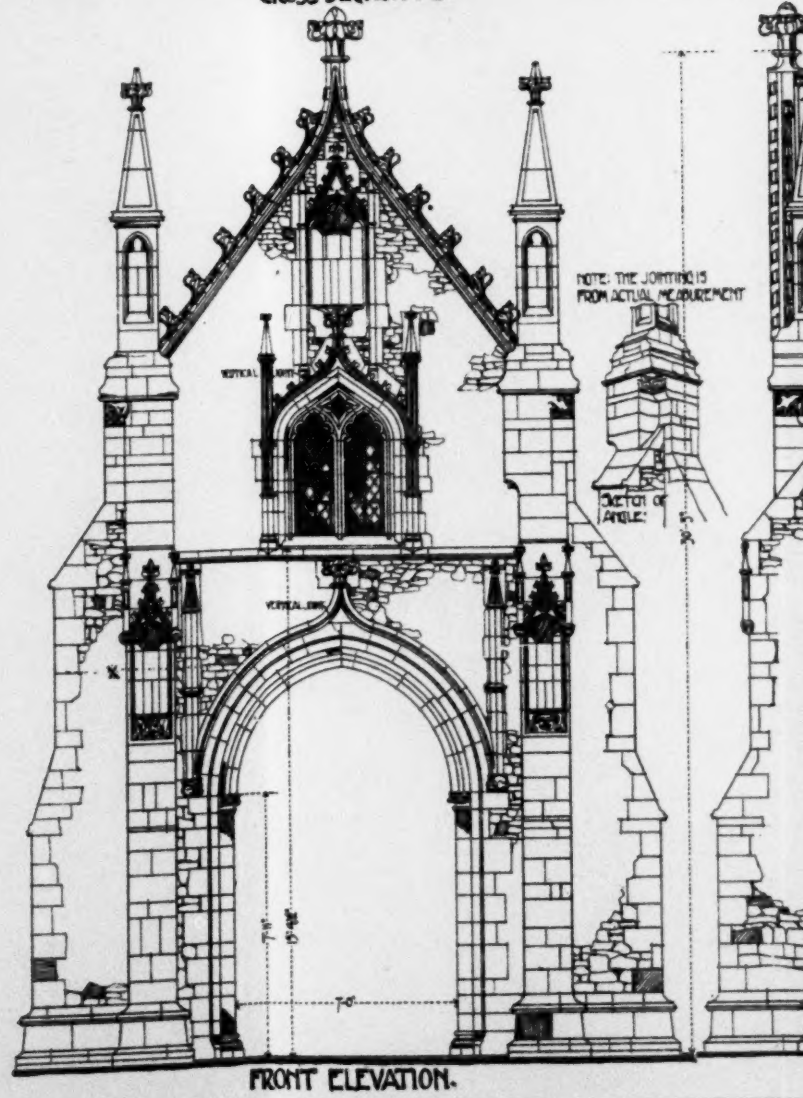
THE PUGIN STUDENTSHIP COMPETITION 1902:

LEVERINGTON CHURCH + CAMBS +
THE SOUTH PORCH +

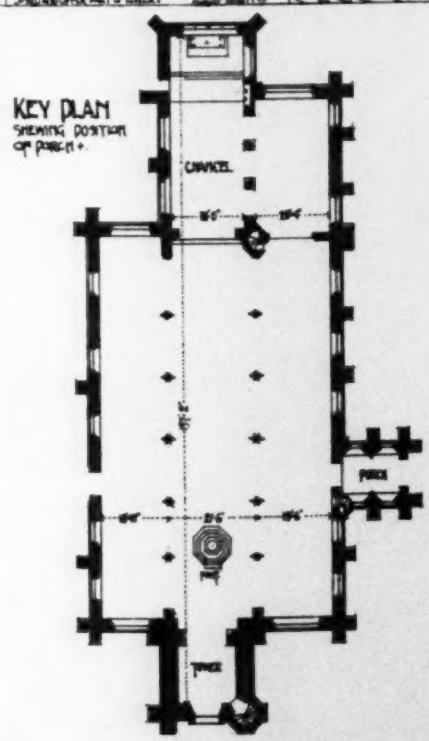
LEVERINGTON CHURCH & CAMBRIDGE — SOUTH PORCH & UPPER PART OF TOWER +



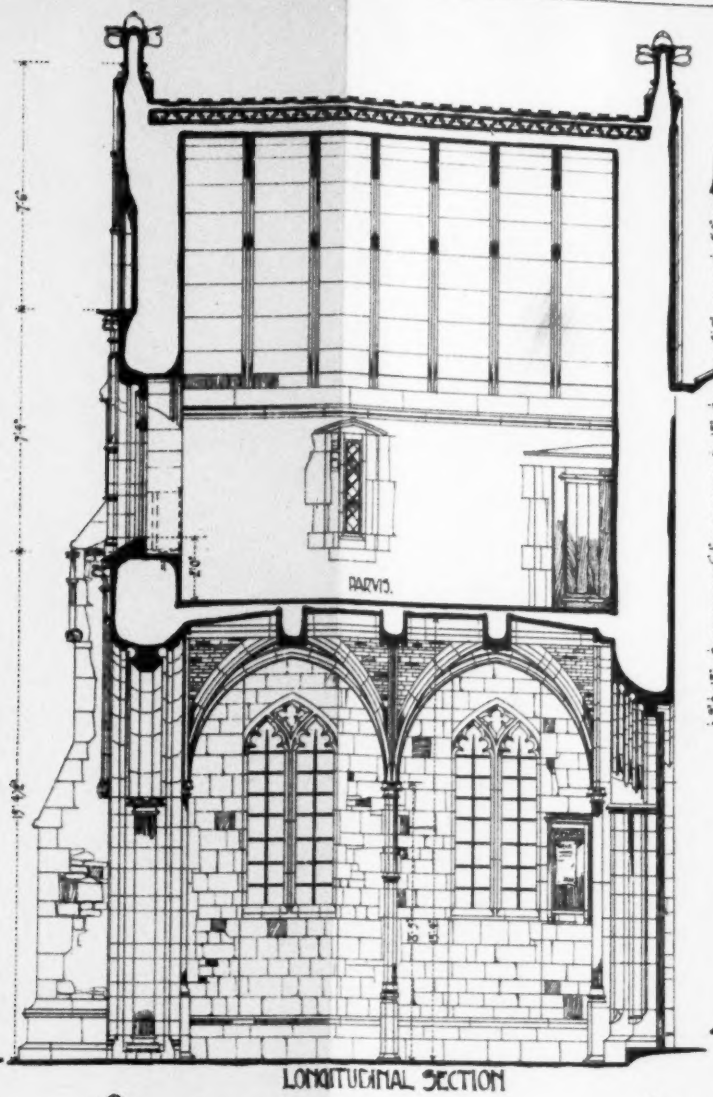
CROSS SECTION AB



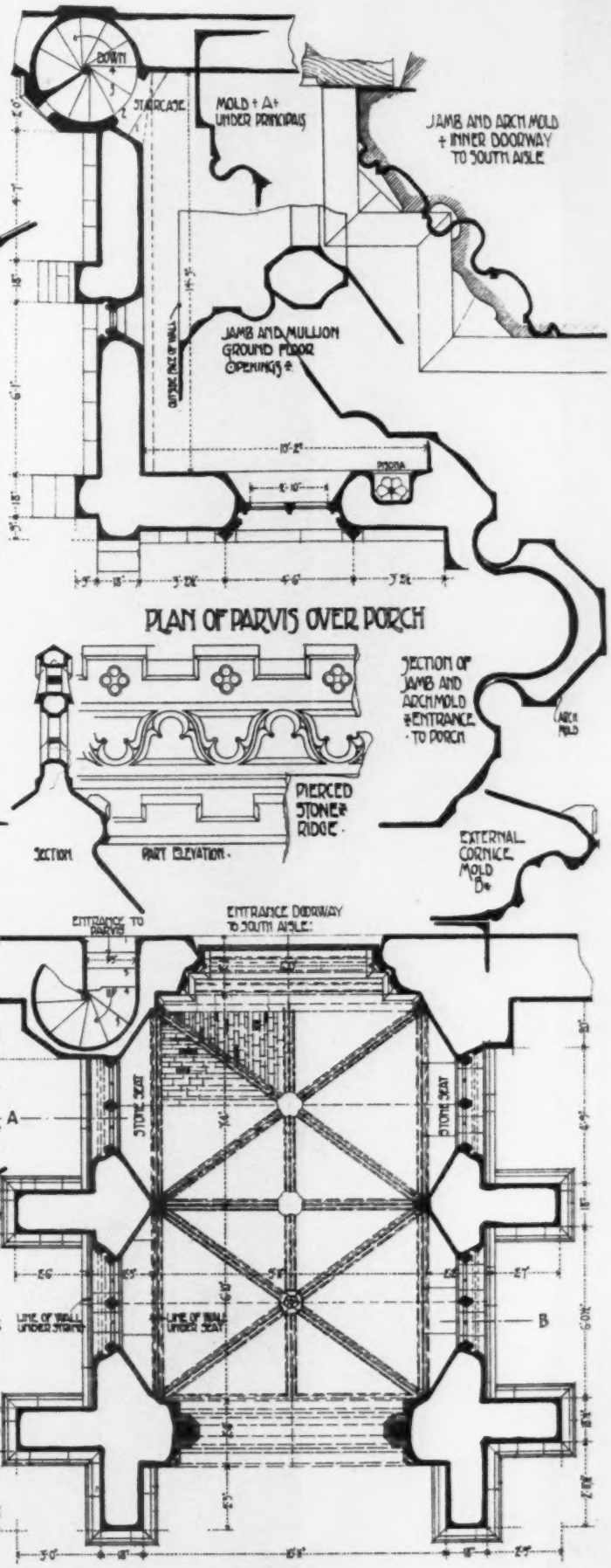
FRONT ELEVATION.



SHEET No 2



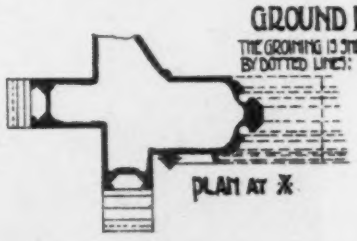
LONGITUDINAL SECTION



PLAN OF PARVIS OVER PORCH

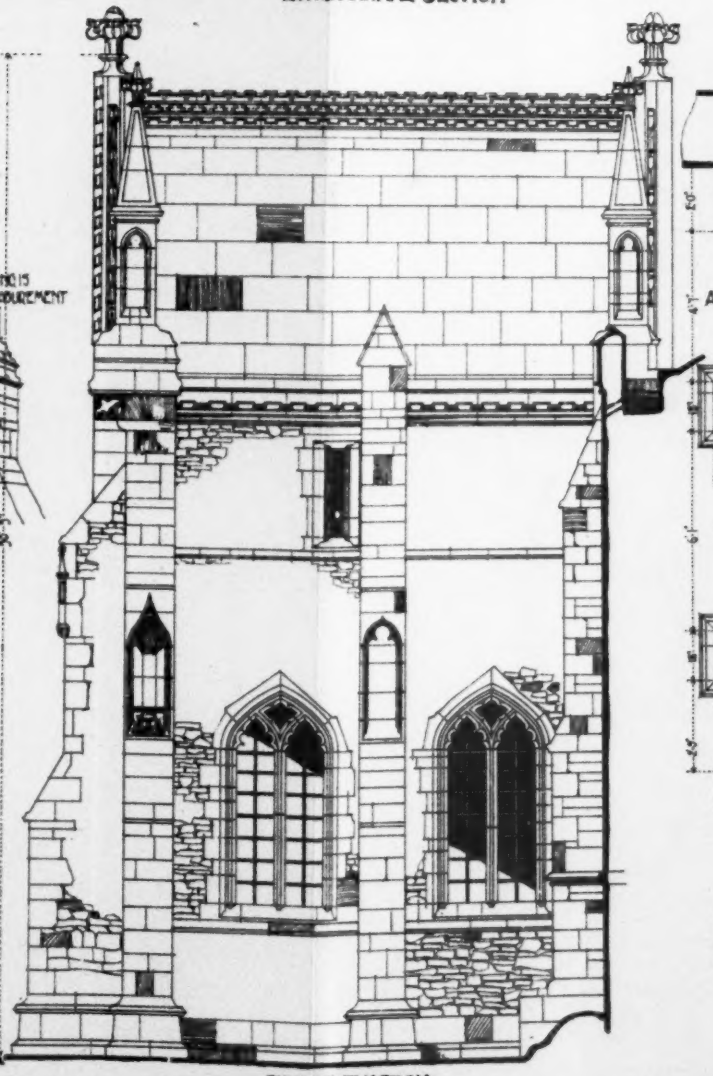
GROUND PLAN

THE GROINING IS SHEWN BY DOTTED LINES:



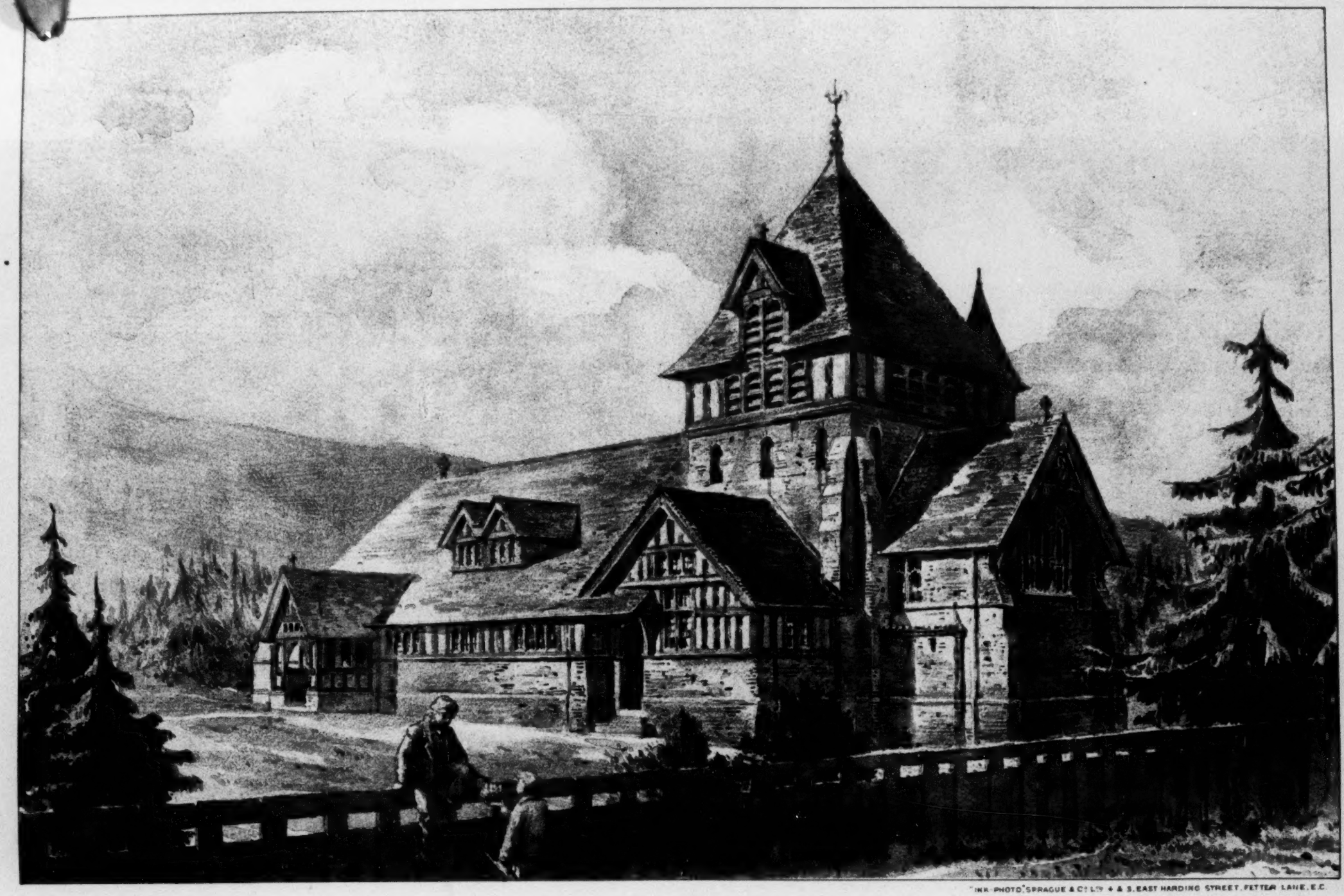
PLAN AT X

MEASURED AND DRAWN BY J. HARALD GOODYEAR. AUGUST. 1899.



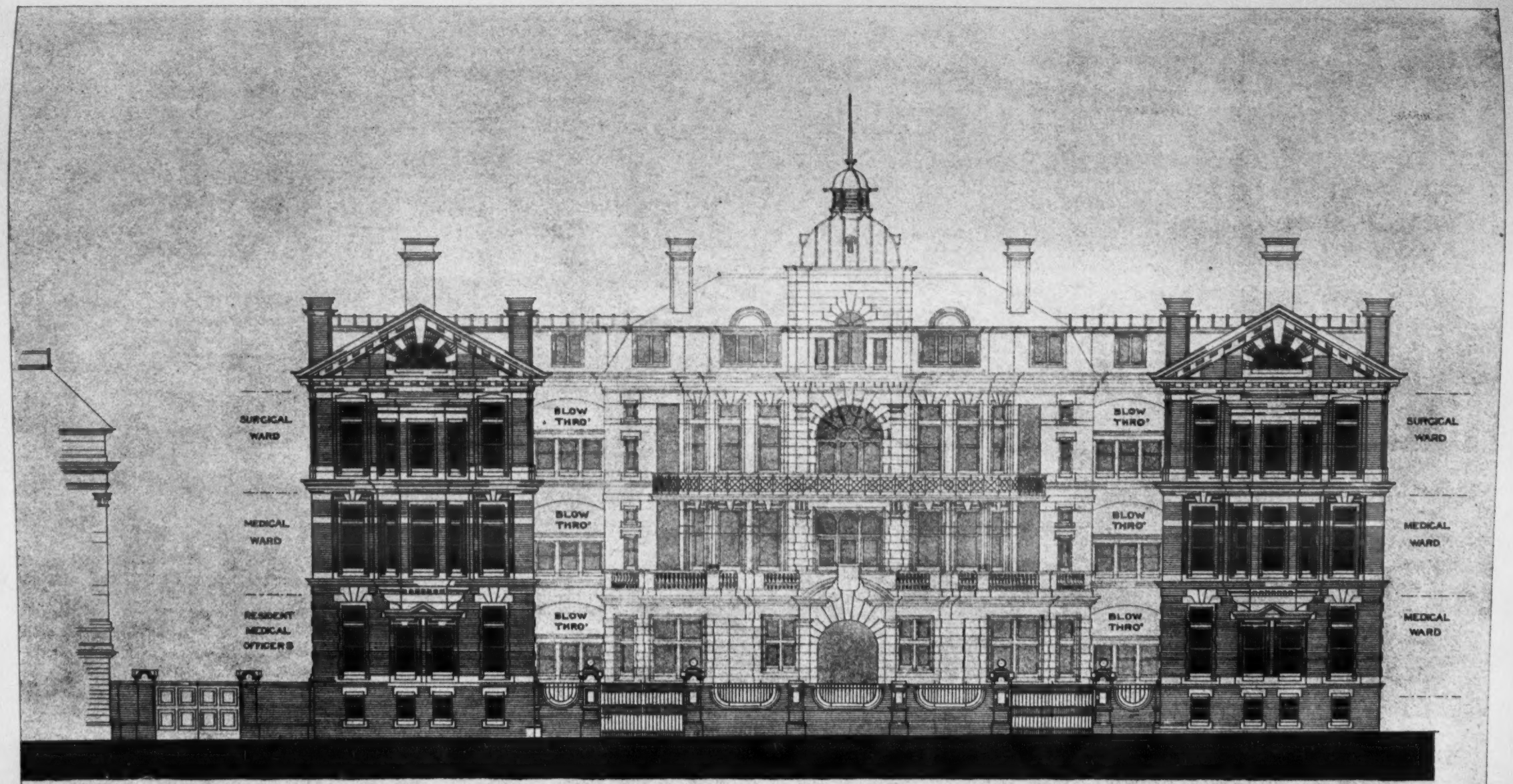
SIDE ELEVATION

PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5. EAST HARDING STREET. FETTER LANE. E.C.



"INK-PHOTO" SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

CHAPEL OF EASE, COLEHILL, WIMBORNE.—Mr. W. D. Caröe, F.R.I.B.A., Architect



ELEVATION TO MYRTLE STREET

SCALE OF FEET

HAIGH & THOMPSON
ARCHITECTS
2 EXCHANGE STREET E
LIVERPOOL

"IBK PHOTO" SPRAGUE & Co LTD 4 & 5 EASY HARDING STREET, FETTER LANE, E.C.

LIVERPOOL INFIRMARY FOR CHILDREN: SELECTED DESIGN.

in thousands, as compared with the numbers which would obtain with the requirements of the residential population for which the streets were originally made. Not only had those houses increased in business requirements demanding traffic facilities, but increase in the number of houses, offices, &c., had taken place along the old lines of route which had in effect been lengthened and lengthened while their width remained unaltered. Moreover, tangled masses of lanes and alleys, where once were houses and cottages with gardens round them, had grown into business hives all having outlets on the few arteries, and adding to the demand for space in the already congested thoroughfares. The cities had, in other words, developed by accretion along main thoroughfares, and by internal growth, and at no time had it appeared to be absolutely incumbent upon the Local or State Authorities to decide upon the laying out of new main thoroughfares on broad principles. The cities had grown gradually like vast extensible bottles, the necks of which had remained unaffected in size or number, until now they were utterly inadequate for the requirements of the vast populations. They were, in fact, like a great water-supply system, the branches of which had enormously outgrown the capacity of the mains. The difficulties were becoming greater because the rate of growth of wheeled traffic was greater than the rate of growth of the population, partly in consequence of cheapened road surface conveyance and partly because of the distances growing more and more beyond the walking distances for the masses. In some of the suburban districts and in country roads tramways had added materially to the convenience of suburban and outlying populations, but tramcars in city streets were the cause of frequent blockings of the traffic, their hard and fast line of route made them incapable of accommodating themselves to the other and more numerous vehicles. That difficulty was greatly increased in many districts where the great growth of branch and suburban populations had increased the local traffic on the main roads and the number of vehicles which must be accommodated outside the business establishments along them. The great question was, how is the conducting capacity of the existing principal thoroughfares to be increased, and how are new main thoroughfares to be obtained on anything like a satisfactory principle or design? There could be no doubt that much of the difficulty in London would be removed by the coming general use of motor vehicles for all purposes, firstly, because of the smaller space they occupied as compared with horse vehicles; secondly, because of their manœuvring capabilities; and, thirdly, because of the greater speed they would make possible. That might be said to be an alleviation which would come of itself, but that was only partly true. The regulation of street traffic must be something more than mere crossing work. The power of control of heavy, slow traffic must be given to the police authorities, so that street and road capacity should not be thrown away, as it was now, by careless and bad drivers, who wasted several feet of the side and of the middle of the road, which could not be used by other vehicles. Drivers of heavy vehicles and of omnibuses habitually wasted the road space now, and it should be within the power of the police to stop that by penalty for disobedience to regulations. The maintenance of the road or street surfaces should be much better than it was now, and more continuous. Vehicles of every kind should be fitted with effective brakes. The great necessity, however, was for more and wider main thoroughfares. It meant, in fact, the Haussmannising of a great part of London, and it meant that London must recognise the hard fact that immense sums of money would have to be spent to remedy the evil of past neglect, and it must wake to its duties of to-day to secure the planning of a well-considered system of wide and well-made thoroughfares into and out of the growing London before building operations made it as costly, and in some respects as impossible, as it was now nearer the centre. Improvements in the modes of locomotion would do much, but at the present rate of growth of wheeled traffic it would not do more than provide for that increase even with great improvement and extension of the chief thoroughfares. Well organised motor omnibus services would save much in space and time, but that would not be until omnibus companies could use motors on a larger scale, so that no vehicle should run more than a certain maximum per day, and so that the mechanical requirements of a thorough system of daily examination, adjustment, repair, and making ready were perfectly carried out under a properly organised staff. In conclusion, Mr. Beaumont observed that improvements in the streets and roads must be taken in hand seriously and at once, for London was a vast hive, into and out of which not only all the bees flocked in morning and left at night, but into and out of which all the carriers of their honey did the same through a very few small doorways.—A long and interesting discussion followed Mr. Beaumont's opening remarks, during which a consentaneous opinion was expressed as to the necessity of improving the existing condition of things, although a variety of conflicting views were advanced as to how improvement should be effected.

THE JUNIOR INSTITUTION OF ENGINEERS.—At the meeting of this Institution, held at the Westminster Palace Hotel on March 6, the Chairman, Mr. Kenneth Gray, presiding, the paper read was "Practical Notes on the Use and Maintenance of Electric Motors for Factory Work," by Mr. W. T. George. A description of alternate (polyphase) and continuous current motors was first given, and by means of diagrams various features in their construction and operation were illustrated. Continuous current motors, having regard to their more general use, were dealt with at length, and the plan adopted by large manufacturing companies for generating and distributing their own power, when extending or putting down new plants, was discussed. The effects of starting large motors on lighting circuits, and the necessity of proportioning the fuses accurately in order to protect the various circuits, were then considered. Shunt series and compound motors were treated, and reference was made to the respective class of work suited to each kind of motor. The various parts of a motor likely to require special attention were enumerated, and the author, in pointing out the necessity for regular and systematic testing for leakage, demonstrated with the ohmmeter and generator, and showed the lamp test. The advantages of electric driving over other methods were indicated, and the utility of keeping a record of all breakdowns, &c., as they occurred, was dwelt upon. Observations on the general management of motors concluded the paper, which was followed by a discussion.

THE LONDON MASTER BUILDERS' ASSOCIATION.

THE thirty-first annual general meeting of this Association was held at the offices, Nos. 31 and 32, Bedford-street, Strand, W.C., on the 26th ult., the President, Mr. G. J. Lough, in the chair.

The minutes having been read and confirmed, the Report of the Council for the year 1902 was read and adopted. The Report stated that there had been an appreciable decline in the bulk of trade done during the past twelve months, but the falling off was not, in the opinion of the Council, of such magnitude as to warrant the agitation that was now being made on behalf of the real or so-called "unemployed." The new subscription rule (No. 16, which was adopted tentatively for one year on June 6, 1901) was made permanent at a special general meeting held on December 18, 1902. The operation of this rule had produced very favourable results, and the Council hoped that it would be able eventually, by the continued support of the trade, to place the Association funds in a condition worthy of employers in the building industry of the Metropolis. No strikes had been reported as having occurred on the works of any members of the Association during the past year. Disputes of a minor character had taken place, but in almost every instance the differences had been settled by the Conciliation Boards.

After referring to the L.C.C. Building Acts (Amendment) Bill, now withdrawn, the Report proceeded as follows:—

"Your Council regrets that Parliament has not intervened to restrict the building operations of municipal bodies. The members of this Association are assured that when the Government affords the opportunity the proper representations will be made on this important matter. Your Council has good reason to anticipate that in the near future a form of contract will be agreed upon by the Royal Institute of British Architects and the Institute of Builders, and has taken joint action with the latter body to abolish the objectionable practice on the part of some public bodies and individual architects who require priced bills of quantities with tenders. Your Council has noted the results of the Taff Vale Railway and other disputes of a similar character, and the efforts that are being made by trade-unions to alter the law, with a view to protect their funds from penalties resulting from the actions of their officials. The Builders' Benevolent Institution offices have been removed to the premises of the Association. The late Secretary, Major Brutton, was compelled, through ill-health, to resign his appointment, and your Secretary, Mr. T. Costigan, was appointed his successor with the full consent of your Council. At the request of the Plumbers' Company two representatives of this Association (Mr. H. H. Bartlett and Mr. Jos. Randall) were appointed to co-operate with that Company in the formulation of a form of indenture for plumbers' apprentices. An agreement was come to and a copy of the approved form was sent to each member of this Association. During the past year fifty-six meetings have been held, and were all well attended. Your Council trusts that the work will commend itself to the Association. The audited accounts will be presented to the general meeting and, in accordance with Rule 10, it will be necessary to elect a President, two Vice-Presidents, a treasurer, an honotary auditor, and eight members on the Executive Council. Your Council reports, with the deepest regret, the loss by death of Mr. A. Walter Spencer (Junior Vice-President) and Colonel A. Stewart Harrison, V.D. Both these gentlemen were highly esteemed and respected by their colleagues on the Executive Council and by the members of the Association."

The audited accounts and the balance-sheet having been adopted, the following officers were elected, *i.e.*, as President, Mr. Ernest J. Brown; Senior Vice-President, Mr. James Carmichael; Junior Vice-President, Mr. Frederick Higgs; and treasurer, Mr. John Greenwood.

The proceedings then terminated.

THE DECORATION OF ST. PAUL'S CATHEDRAL.

ON Monday evening a meeting of the Incorporated Institute of British Decorators was held in Painters' Hall, Little Trinity-lane, E.C., Mr. J. D. Crace, President, in the chair, when Sir William Richmond, K.C.B., R.A., delivered a lecture on "The Decoration of St. Paul's Cathedral."

The Chairman, in introducing the lecturer, said that Sir William had for some years past been engaged upon that wonderful work, the decoration of St. Paul's Cathedral. Whenever he, the Chairman, entered a building which had any claim to be considered architecture, he always thought of what decorative treatment it would admit of, and, of all the buildings he had ever been in, St. Paul's Cathedral appeared to present more difficult decorative problems than any other, and these problems had been faced with great success by Sir William Richmond.

Sir William Richmond said he did not propose to address them as a lecturer, but more as one who was taking part in a *causerie* on the subject. He did not stand there to teach them what they knew, but as a fellow student, who had tackled, no doubt, a very difficult task and had done it to the best of his ability. They all knew how many differences of opinion there must be in matters of taste, and time alone would settle the position which any work of art was to achieve. If what he had done in St. Paul's was proved 100 years hence to have been a mistake, he hoped it would be hacked out. Up to the period of what he was inclined to call sham classic, all over Europe the churches were decorated with colour. It was the introduction of the Palladian style—a noble style, no doubt—that drove colour away. In Italy, many of the fine mediæval churches are cased in the Palladian style, and underneath the architecture upon the walls there were precious paintings of more sympathetic times. He was therefore in a sense, "taken on the hip" when he frankly proposed to colour a Palladian building and to use that colour lavishly, though, he hoped, with discretion. He was told by a great many people that it was an impossible nut to crack, but he replied: "I will crack it."

At the time of the Prince of Wales's recovery from his serious illness 100,000*l.* was collected for the decoration of St. Paul's Cathedral, and about 30,000*l.* was wasted by the authorities in experiments, all manner of experiments being tried. The putting up of scaffolding underneath the great dome in order

to place cartoons there cost between 800*l.* and 1,000*l.*, and that being so, he did not want to make any more experiments. The work began in this way: Mr. Bodley, who was entrusted with thinking out some scheme of decoration, asked him (the lecturer) for his views, which he gave him. Now those views were absolutely decided long before he was asked even to consider the decoration of St. Paul's, and they were decided rather curiously. When he was a little boy, thirteen years of age, his mother took him to hear a service in St. Paul's. He looked up to the mighty roof, and coming out he said to his mother, "Some day I will cover that with mosaic." Years after that, when he was nineteen years of age, he made his first visit to Italy, and he said to himself then—it was forty years ago—"I will now begin to prepare myself for the great task which may some day come to me." He visited then, and he had visited since, all the churches covered with mosaics in Italy, many in Asia Minor and all in Greece, so that in a sense he was prepared—anyhow to think about the decoration of St. Paul's. He made up his mind to stick to two things in carrying out the decoration of St. Paul's. One was that the work should be carried out by Englishmen, and not by Italians, and that if he could not find Englishmen who could do the work he would not send to Italy for them, but that he would teach and train them himself. The second thing he decided was that he would never have anything to do with that odious modern invention, paper mosaic; that he would set the tesseræ in cement and not stick them on with a bit of glue on to a piece of paper and then pile them on to the wall—a most childish and vicious operation. Work which was appliqué could be done anywhere; it could be done in Italy and carted over here, and the man who did it never, perhaps, saw the building in which it was to be placed, and did not know what the environment was—perhaps never saw the work executed at all. An axiom he would go to the stake for was that decorative work, if possible, should be done *in situ*, and with the experience he had had in covering nearly 15,000 sq. ft.—including windows—of wall, he knew that that axiom was sound, for it was impossible to tell, except on the spot, how colours or even forms would tell. Light was such a subtle thing—so deceptive, so often misleading, that a red or a blue or a yellow, or even a white, might entirely change its relative value. The Committee entrusted the work to him and he made it a condition that he was not to submit his designs to the British public. The British public had not made up its mind in the least degree as to what it liked, and it was for artists and decorators to help them make up their mind. Neither had the critics of the Press unanimously made up their mind, for one set would be found praising one class of work and another set would be demonstrating its folly. He did not intend to alter any of his designs, except from the point of view of either ecclesiology or archæology, and he said to the Committee: "You must trust me as the artist; I am supposed to know my business." He determined to begin in the east-end, on the north-east sanctuary wall. For the mosaic he went to Messrs. Powell, of Whitefriars. He asked them if they could make him some glass mosaic as good as the old Greek glass, and he was told that they could, and he was bound to say that they had manufactured glass mosaic as good as the old Byzantine glass. Then as to laying the mosaics, he had first to teach the workmen how to work. He got together a number of boys and young men who could not draw, and he built a studio in his garden, and there he taught the students how to lay the tesseræ from his cartoons. The labour was great: they started at eight o'clock in the morning and worked till eight o'clock at night. He knew it was no use to make the first experiments upon the walls; therefore he had large slabs of slate cut, well scored with diamond shapes; and upon these he laid the cement, He found the receipt for the cement by accident in the library at Bologna. The cement, which was used in the decoration of the baptistry at Florence, was composed of wax, lime, and resin. It was very good for its purpose, for it kept sufficiently moist for five to eight hours, and could during that time be worked as wax, and then it became as hard as stone and did not shrink. From his drawings tracings were made, and the outline was then pricked into the cement. A mosaic worker was then given a series of colours, say four, with a rough colour drawing by his side, and was told how to place the cubes. As the boys became more intelligent (and he found that by kindness intelligence grew) they worked better, and after four months they produced two large angels which are now to be seen in St. Paul's on the north-east wall of the Sanctuary. A start was then made in the choir vault, and he determined from that time to work direct upon the wall, for he had trained the men sufficiently. With a staff of nine he started on the enterprise, having two assistants who traced for him. He made for the design of the vault of the choir over 3,000 drawings, and his *modus operandi* was as follows:—He put down as swiftly as he could an idea on paper while it was fresh in his mind, and then he put tracing paper over that, and corrected it until it began to look right. The same with the colour scheme: first a blot of colour, then tints carefully chosen and corrected; and perhaps for one design he made twenty colour sketches. The design was scored in in charcoal by one of his assistants, and then he (the lecturer) determined the colour. He took a tessera which represented the colour he had in his mind, and he mixed his tints to that and put them on as swiftly as he could. In putting them upon the walls the workmen became so dexterous after a couple of years that with a very slight hint of colour they were able to carry out his scheme with admirable skill. As a fact, he had never seen such fine mosaic work—he was referring to the labour only—in any country in the world as his workmen did in the four quarter domes of St. Paul's. We had no business to say that Englishmen were not artistic. What were called the lower classes were full of taste, and they only wanted good guiding and kindness to do as noble work as was ever done by the Italians.

The beauty of mosaic as an art was that it gave pictures in bricks; but directly the artist attempted to imitate an oil or water colour picture in a material which was not at all ductile he committed a great mistake, and that was the mistake which had almost invariably been committed in England by people who designed in mosaic. He very much disliked the huge prophets in the big spandrels under the dome of St. Paul's; they were very fine designs, but not designs which ought to have been executed in mosaic; they ought to have been painted upon the walls in oil or water colour. Mosaic, when used in that way, gave an inferior representation of a superior medium. That kind of bad taste was catching, and it was caught in Italy, at St. Peter's, at that bad time of art when the huge mosaics were done at the east end and over the side chapels. At that time people were treating the wall as they treated a picture. The same remarks applied to St. Mark's, Venice. Severity was the mother of mosaic, simplicity its father, and without those two conditions, and unless they accepted those two conditions, they had better never touch mosaic work. He made a great many mistakes at St. Paul's, but never the mistake of being too simple; he made many by being too complicated. If he were to imagine the most delightful mosaic which could be made, it would be something like this: a simple, graceful, majestic outline of a Greek vase filled with the most simple colours, absolutely irrespective of light and shade, and only dominated by tint and tone. There could be no good reason why the mosaic drawing should not be as splendid as the drawing on the Greek vase, for what they could do in mosaic was essential and what they could not do was accidental. The Greek, with his magnificent conceptions, his limitless intuition, and his ingenuity, showed simplified nature; he gave it all to them, and yet there appeared to be nothing. That was the principle upon which all great decorators should go. In decoration it was no use to copy nature; they must have learnt nature and have nature at their fingers' ends, and they must learn that lesson which came to them late in life, *i.e.*, what to leave out.

Michelangelo said that one never learnt from one's successes, but one always learnt from one's mistakes. At the initial part of the work he made two mistakes; he used too much white and too little black. White expanded at a distance, and it had a tendency to spread. Colours needed to be separated by a black line, or they merged. One of the essentials of good mosaic decoration was the use of few colours. He began with thirty, then reduced them to fifteen, and finally to five. He found out how to use these five colours and make them tell, and also to get a greater variety by using five colours dexterously than by using thirty clumsily. Pliny told us that the later Romans had a mixed palette, and they painted bad pictures, and that the ancient Greeks had only four colours, and with these they painted pictures valued at the price of a great city. In order to get white in the quarter domes underneath the big dome of St. Paul's he had to use the very brightest yellow he could procure. If he had used white it would have looked quite blue. He would like any of them who were interested in what had been done at St. Paul's to go on a fine day into the left aisle and look at a window which was in the quarter gallery at the east end, and then at the windows in the dome, and let him know which was the whitest. The windows in the dome were made of what is called cathedral glass—an abominable colour, a sort of green stuff which is called white. He determined to make white by colour, and he produced a design for white light in sheet lead. He used red, blue, and yellow only—no green; that was an abominable colour to use: if they wanted darkness, they could use green. White, blue, and red in proper proportions produced white at a proper distance. His windows made in that way with sheet lead were whiter than the green things put up in the dome.

Speaking of stained glass, he said that it seemed to him that the art of stained glass was going out of the country because the designers were determined to make pictures. The most beautiful windows that were ever made were those which were outlined with lead only, and with no pigment added to them. Those were the early windows, such as were to be seen in the upper church at Assisi, which were perfect jewels. At South Kensington the other day two students painted two little specimens of windows as light and coloured as they could. One student took a piece of white glass and painted and modelled it very elaborately. The other leaded his window well up in bright colour, and when the two were placed side by side at the end of the room the leaded window gave the bright light. Light permeated transparent colours, but it could not get through pigments.

The work at St. Paul's had, for a time at any rate, been suspended. He was finishing one aisle, or one bay of the aisle, and it would be opened before long, and it would give an example of the manner in which he would like some day to treat the two aisles. There were angels on a gold ground—he had used red and gold rather freely. If they looked at his scheme and compared it with the bare walls of the vaulting of the aisle they would see that his mosaic and the decorative part looked as though it were on a paper wall because the scheme had not been carried across. In the completed part they would see that it not only formed the vaulting of the aisle, but that the colour formed the buttress. It was curious to see how that since the aisle had been decorated with colour and brought up to the same point of interest as the face of the wall how infinitely stronger structurally the church looks, and that was a matter they must always keep before them as decorators. Colour could either strengthen the appearance of structure or weaken it.

It was unfortunate that architects were not a little more broad-minded, and that they insisted so much upon their noble art standing alone. It never did. That was the most ridiculous position for architects to take up; in the first buildings ever put up colour was introduced. The Parthenon was coloured from top to toe, and if some of the sham Classic architects were to see that building as it was, they would say it was not to their liking. Every Norman church in England was painted, and there were over 2,000 churches in England now, notwithstanding the Puritans and iconoclasts, that retain vestiges of mediæval paintings; and England was renowned on the Continent as having a greater number of painted churches than France and Italy. Until the architect, the sculptor, and the painter worked together in unison we should not get the finest art, or art as it used to be in this country. It had been his endeavour at South Kensington that the students should not limit themselves to one art—they learnt to execute work in concert.

A vote of thanks to Sir William Richmond, proposed by Sir H. Knight, and seconded by Lieut.-Colonel Prendergast, brought the proceedings to a close.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS:

III.—CHURCH, FARM-STREET, AND DUKE OF MARLBOROUGH'S HOUSE.

On Saturday, the 7th inst., the Association visited the Church of the Immaculate Conception, Farm-street, and the Duke of Marlborough's house in Curzon-street. Members met at the church, where the architects, Messrs. Romaine-Walker and Besant, met them. The nave of the church, the sanctuary of which is towards the north, was originally designed and carried out by J. J. Scoles fifty years ago, an eastern aisle being added later by Henry Clutton, while the altar was designed by A. W. Pugin. Messrs. Romaine-Walker and Besant are now decorating the nave with marble, and are adding a western aisle which is in many ways a most interesting piece of work.

The great difficulty to be overcome was the fact that the west boundary of the new aisle is a high party-wall, and therefore to obtain light continuously along its length, without sacrificing space for a light area, was a hard problem to solve; but the use of the confessional supplied the key, and, by a most ingenious arrangement, a series of side chapels has been planned, with canted sides, enclosing a small semi-octagonal chamber between each chapel. These chambers are roofed in about 8 ft. from the ground, and lighted by a skylight, and will be occupied, often for hours at a time, by the confessor, and are a great improvement on the cramped boxes usually to be seen. In the canted sides of the chapels above these chambers, and looking into the light areas thus formed, are large windows, which will give ample light to both aisle and nave. Opposite the square ends of the chamber, and sufficiently distant to leave room for the penitents' boxes, the shafts carrying the vaulted roof are arranged in pairs, and so spaced that an ambulatory is formed between them and the confessionals, adding much to the air of mystery and secrecy, so important an element in the Roman Church. The vaulting, unlike that on the south side, has rising and falling ridges; the ribs are of Monks Park stone, and the infilling is of chalk, with narrow bands of York stone, the three colours blending well together. The north end of the new aisle terminates in a chapel dedicated to St. Ignatius, and here a light area, 14 in. in width, is arranged between the party wall and the church, the party wall being faced with white glazed bricks, and the area being covered in with a prismatic pavement light at the roof level, by which means the area will remain dry and clean, and probably the light from the windows will be amply sufficient.

Mention must be made of the chapel of Calvary to the left of the entrance from Farm-street, with its vaulted roof without filling, through which the subdued light will softly fall from the skylight above. The church is still very unfinished and choked with scaffolding, which facts, coupled with a somewhat hasty visit and a very large number of members, makes a more detailed and appreciative description impossible.

From the mystical atmosphere of the Roman church, Mr. Romaine-Walker led the party to the great mansion he has designed for the Duke and Duchess of Marlborough in Curzon-street, on the site of the old Curzon Chapel.

The essence of the scheme seems to be display, display, and ever display; for the house is clearly not a "home" or even a "London house," in the accepted sense of the word, but a sumptuous shell, which will be gilded with all manner of costly lining. The great *motif* in the plan is therefore a Society function: the arrival, entertainment, and rapid departure of guests are the problems which the architects have mainly had before them. With these objects in view, the style selected for the outward architectectural expression of them is that of the period of the world's history known as Louis Seize.

The site is an isolated rectangular one, about 100 ft. by 60 ft., bounded by streets on all four sides. The main entrance is from Curzon-street, and so contrived at the East Chapel-street corner that upon important occasions guests can depart into both streets at once. After passing through a vestibule with the Duke's room on the right, the hall and grand staircase is reached in the centre of the house looking into East Chapel-street, and with subsidiary staircases on either side. Opening centrally off the hall is a circular reception-room recessed from the West Chapel-street front in order to allow of the unobtrusive planning of the unfortunately necessary water-closet.

At the south end of the building, and entered either from the staircase hall, or through a vestibule from the reception-room, is the dining-room. This room will be decorated in imitation of the Wren period, with panelling and carving and family portraits, and will be the only room in the house which is not given over to French art.

The first floor is entirely devoted to reception purposes. A great gallery 100 ft. long by 25 ft. wide by 30 ft. high, which will have a coved and painted ceiling, occupies the whole of the west side, the great stairs, subsidiary stairs, and drawing-rooms taking up the remainder of the floor. The second floor contains the private rooms of the Duke and Duchess, and the upper part of the gallery; the third floor contains nurseries, and two two-roomed suites for guests; while the attics are given over to maid servants. Kitchen and offices are in the basement, and sub-basements provide storage space and cellarage.

The lighting of the basement has been difficult, and until the house is more complete it is not possible to say with what success sufficient light and air have been given to the workers of the establishment. At present little more than the bare shell is completed, and until the scaffolding and gantry are quite cleared away it is hard to judge of the Portland stone elevations.

The hall and grand staircase will be decorated with stucco, which is now being carried out by French workmen.

Messrs. Cornish & Gaymer, of North Walsham, are the builders of both the buildings visited.

Members of the Association will look forward keenly to another visit so kindly promised by Mr. Romaine-Walker, who, with his partner, was indefatigable in doing everything to make the visit the success it undoubtedly was, and at the end a hearty vote of thanks was accorded to them for their kindness and trouble.

SANITARY INSPECTORS' ASSOCIATION:

SANITATION, ETC., AT PORT ELIZABETH.

The monthly meeting of this Association was held at Carpenters' Hall, London-wall, on the 7th inst. Mr. Isaac Young, Chairman of the Council, presided.

A paper on "The Liverpool of South Africa," prepared by Mr. S. Henry Kemp, Chief Sanitary Inspector of Port Elizabeth, was read by Mr. C. C. Tidman. It contained not only a review of the sanitary methods at Port Elizabeth, but many comments as to the defects of the system in vogue compared with the more up-to-date practices in Great Britain. The town was not, in the first place, well supplied with water. The present average supply did not exceed 400,000 gallons, which worked out at less than 9 gallons per head after the shipping, factories, and other calls had been supplied. The waterworks, owned by the ratepayers, are situated about thirty miles from the town, in the beautiful district of Van Staadens. The water originally flowed between two hills, and at a point where it changed its course southwards a concrete well was constructed; the water passed direct into the main, and was thus conveyed into the town without filtration. However, some ten years back a new dam was constructed at a higher point, and when the reservoir is full, over thirty million gallons of water are impounded. In the centre of the dam is the valve tower, in which are two valves, at 14 ft. and 28 ft. below the sill; the water can thus be taken from either depth as required. The space between the lower valve is reserved for deposit of sediment, &c., which is periodically drawn off through a 16-in. sluice valve. Four filter beds have been provided, and it is possible to filter one million gallons daily. The water is conveyed into town by means of a 12-in. cast-iron pipe by gravitation, and is stored in the service reservoirs two miles on the east side of the town. The high-water mark at the storage reservoirs is about 980 ft. above the level of the sea. Some few years back the Council erected a pumping station three miles below the Van Staadens reservoir, and by pumping the water that accumulates from the various small tributaries to a tank and filter bed some 300 ft. above the level of the river, the water there enters the main. The supply, although splendid in quality, is totally insufficient, and several schemes have been before the public for some time past, but it is only since the termination of the war that they have taken any definite form, and he was pleased to record that at a recent meeting of ratepayers a scheme for trapping the supply of the Sand, Palmiet, and Bulk rivers, and thus supplementing the present daily average supply by an additional two million gallons, at a cost of 360,000*l*., was unanimously agreed to. It is now estimated that in the severest drought the supply will not fall below one and a quarter million gallons per day. As to sewage, the pail system had been in vogue for thirty years, but the collection is left to the discretion of each householder. This, however, is about to be altered for a system of drainage, constructed at a cost of 200,000*l*. Much was, Mr. Kemp held, required in the way of removing overcrowding, and as to sanitary law, a general amendment was necessary. On the latter subject Mr. Kemp remarked: The first Public Health Act saw daylight in 1883; but the title seems to have been ill-chosen. It would have been better titled as the Infectious Diseases Notification Act. However, in 1897 a further Bill was introduced to amend and supplement the 1883 Act. This Act gives very extensive powers in the way of framing regulations dealing with many vital points; but the Government has not done all it could by way of approaching the various authorities to frame their necessary regulations. A small Bill dealing with dairies and cowsheds passed through Parliament in 1891. In 1897 the Port Elizabeth Municipal Act appeared, but owing to cutting up by the law agents prior to finding its way before the House, many of its good points were omitted, and, as it at present stands, it is of little use to our department, with the exception of one of its last clauses, which gives the Town Council the power to frame regulations dealing with certain nuisances not mentioned in the Public Health Amendment Act, 1897. A Sale of Food, Drugs, and Seeds Act was passed in 1890. The administration of the Act is placed in the hands of a special public officer who has charge of the whole Colony, and the Sanitary Authority finds no place in the working of an Act which is morally a part of its duty. The Act is all that can be desired, with the one exception mentioned, viz., the administration of it should be in the hands of the Local Authority, at any rate as far as Cape Town, Port Elizabeth, East London, Kimberley, and Grahamstown are concerned. Many of the regulations dealing with nuisances under the Public Health Acts are absolutely void of common sense. The correct reading of some would puzzle a court composed of a dozen K.C.s, and every one of them would differ in opinion. Others would make good reading for *Punch*. Several still on the Statute Book are *ultra vires*, while others are made unworkable by the resolutions of the Town Council from time to time. My honest advice is to consign the whole lot to the waste-paper basket and start afresh. Regulations dealing with even the fundamental principles of building construction are conspicuous by their absence. On other matters they seem to have scored pretty freely. Inspectors in the Colony have a distinct advantage in being in the position to take cases before the magistrate without even consulting the Council or any of the committees. In many instances there is no doubt but what our object would be frustrated if it were not for this provision. Another good provision is that our intimation notice is our statutory notice also, and the one service is all that is necessary.

On the motion of Mr. J. J. Smith, seconded by Mr. Alexander, a vote of thanks was accorded to Mr. Kemp for his paper.

BOOKS RECEIVED.

Continuous Current Dynamos and Motors. By W. R. Kelsey, B.Sc. (The Technical Publishing Co.)

Specification for a Lancashire Boiler and Boiler Seating. By "Inspector," M.I.M.E. (The Technical Publishing Co.)

The Georgian Period: Measured Drawings of Colonial (U.S.A.) Work. Part XII. (B. T. Batsford.)

The American Vignola. Part I.: The Five Orders. By W. R. Ware, Professor of Architecture in Columbia University. (B. T. Batsford.)

Poor Law School, Kentish Town.—The foundation stone of this building was laid in Leighton-road recently. It is to be built from the plans of Mr. Albert E. Pridmore, and is estimated to cost 16,000*l*.

THE ARCHITECTS' BENEVOLENT SOCIETY.

THE annual general meeting of the subscribers and donors of the Architects' Benevolent Society was held in the rooms of the Royal Institute of British Architects, No. 9, Conduit-street, on Monday, Mr. Aston Webb, A.R.A., President, in the chair.

The annual report was read by Mr. Percivall Currey, hon. secretary, and it was, on the motion of the Chairman, adopted, as was the statement of accounts. We take the following from the Report :—

"The Council of the Architects' Benevolent Society have held seven meetings during the year, the average attendance of members being nine. Fifty-two applications for assistance have been investigated, and the sum of 593*l.* 10*s.* has been distributed in relief. In addition to this, the sum of 205*l.* has been paid to the Society's pensioners. The investments which the Council were enabled to make last year in consequence of Mr. Cates' bequest, and the generous response to Mr. Macvicar Anderson's appeal, are now bearing fruit. Had it not been for this addition to the dividends, the Council, it is feared, would have had to report a serious diminution of the income occasioned by the falling off in the amount received in subscriptions. At the close of the financial year, thirty subscriptions were in arrear, notwithstanding repeated and urgent applications for payment. It is hoped, therefore, that the claims of the Society will become more generally recognised, and that the progress which has been made within recent years, both financially and in practical usefulness, may not be checked through the lack of adequate support. Architecture is not one of the most lucrative professions, and those who practise it are not always in a position to make provision for later life or for those depending on them, or to anticipate the needs occasioned by disease or accident. The Society meets the necessities of such cases as these ; and the Council, on behalf of their poorer brethren, look to those in prosperous circumstances for sympathy and help. . . .

The resolutions moved by Mr. J. T. Christopher, and adopted at your last meeting, were subsequently confirmed by a general meeting convened for the purpose on March 24. The immediate result of these changes in the by-laws was to enable the Council to extend its investments to Colonial stock by the purchase of 363*l.* 2*s.* 3*d.* New Zealand Three per Cent. Inscribed stock (which is now a trust investment), at a cost of 350*l.* ; and further, to increase the number of the Society's pensioners from six to ten.

The sum of 154*l.* 4*s.* has been received in donations during the year and placed to the credit of capital account. . . . . Your Council have the pleasure to report that the subscription of the Royal Institute of British Architects has been increased to 21*l.* ; and that twelve new names have been added to the list of subscribers.

At the request of the Council, Mr. W. Hilton Nash kindly prepared a design to take the place of that hitherto used on the cover of the Red Book. The design was accepted, and Mr. Nash cordially thanked for his services in the matter.

The following gentlemen, being the five senior members, retire by rotation from the Council :—Mr. Zeph. King, Mr. G. Inskipp, Mr. J. T. Wimperis, Mr. Arthur Green, and Mr. E. Monson. To fill the vacancies caused by these retirements the Council desire to nominate Mr. E. A. Gruning, Mr. Edwin T. Hall, Mr. Lewis Solomon, Mr. William Woodward, and Mr. H. H. Collins.

The balance-sheet and income account for the year ended December 31, 1902, audited by Mr. Edmund Buckle and Mr. George Hubbard, are herewith submitted.

The Council have to thank the Royal Institute of British Architects for their increased subscription, and for office accommodation and the use of rooms in which to hold their meetings. Thanks are also due to the Secretary (Mr. Locke) and the other officials for their cordial interest and help in any matter connected with the Society."

The Chairman said that architecture was one of the least lucrative professions, and there were always those who needed help from a society like this. The Society was one entirely for architects, and it carried on its work without any personal publicity, so as not to hurt the feelings of any one. It was as well to make that known, as there were many deserving men, no doubt, who hesitated to come upon the Society for fear that publicity would be given to their application. Outside the Council no one knew who received help. It was a matter for congratulation that the Society had been able to increase the number of pensioners to ten, but the Society would like to increase the number still further, as there was nothing so helpful to a man as a small pension which he could rely upon. At present the number of architects who helped the Society is small, and it was not altogether creditable to the profession that so few subscribed in comparison with the number who might.

Mr. Henry Lovegrove proposed a vote of thanks to the outgoing members of Council. In the course of his remarks he repeated the suggestion that in order to make the Society better known, a yearly dinner might be held. The Society ought to be better supported than it is.

The motion was seconded by Mr. Scamell and agreed to.

On the motion of Mr. J. Macvicar Anderson, seconded by Mr. Lovegrove, the Council was elected as follows, *i.e.*, Messrs. Sydney Smirke, H. L. Florence, G. C. Awdry, J. T. Christopher, F. T. Baggallay, J. J. Burnet, J. H. Christian, R. St. A. Roumieu, G. Scamell, E. A. Grüning, E. T. Hall, Lewis Solomon, W. Woodward, and H. H. Collins.

On the motion of Mr. H. L. Florence, seconded by Mr. G. C. Awdry, a vote of thanks was accorded to the Hon. Treasurer, Mr. W. Hilton Nash, who briefly replied.

Mr. Watson then proposed a vote of thanks to the Hon Secretary, Mr. Percivall Currey.

Mr. Awdry, in seconding, suggested that it might be possible to let architects who are not subscribers know, without giving names, a little of some of the sad facts which came before the Council from time to time.

The motion having been agreed to, and Mr. Currey having replied,

A vote of thanks was, on the motion of Mr. Nash, seconded by Mr. King, accorded to the auditors, Messrs. E. Buckle and G. Hubbard ; and Messrs. Buckle and Hunt were elected as auditors for the ensuing year.

A vote of thanks was, on the motion of Mr. Inskipp, accorded to the Royal Institute of British Architects for the use of the Rooms and for office accommodation ; and a vote of thanks to the Chairman brought the proceedings to a close.

THE SURVEYORS' INSTITUTION :

VALUATION FOR RATING IN IRELAND.

AN ordinary general meeting of this Institution was held on Monday, at No. 12, Great George-street, Westminster, S.W., Mr. Arthur Vernon, President, in the chair.

The minutes of last meeting were read and confirmed, and Mr. Penfold, hon. secretary, announced some donations to the library, a vote of thanks being passed to the donors.

Sir John G. Barton, C.B., then read a paper entitled, "Valuation for Rating in Ireland." The author dealt at length with the early history of Irish valuation, the annual revision of the valuation, and the revaluation of county boroughs. He said that speaking generally the system of valuation in force in Ireland has many advantages. In the first place, in the carrying out of the work by a central department who have no interest in making the individual valuation dealt with high or low, and are in no way influenced either by the rating authorities on the one hand, or the ratepayers on the other. In the second place, in having the work carried out through a staff of professional valuers and surveyors who enter the service after passing through a surveyor's, architect's, or engineer's office, and who are all trained in the department on similar lines, and act under the same code of regulations. In the third place, in insuring through a central authority controlling and regulating all the work done by the valuers, that all the valuations made throughout the country each year shall be relative in the several rating areas, and that valuations which run into several rating areas, such as railways, tramways, &c., shall be valued as a whole, and a division made proportionate to their rateable value in each. To some extent this uniformity of valuation has been secured in London through the assessment conferences. In the fourth place, in having available for the use of the public and the courts a record in the valuation department of the history of the changes in area and valuation, of practically every holding in the country and an account from an agricultural point of view of its soil and subsoil, and how it was tilled when the original valuation was made.

The blot on the system, in the author's opinion, is that proper provision was not made for perennial revaluation, which in cities should be carried out every ten years or twenty years, according to the percentage of increase, and in the country every thirty years. Had this been done, and the annual revisions been more effectually made, Ireland would, he believes, be the most equitably valued portion of the United Kingdom.

A vote of thanks to the author having been agreed to, the meeting terminated.

THE BUILDERS' ACCIDENT INSURANCE.

THE 22nd annual general meeting of the Builders' Accident Insurance, Ltd., was held at the offices, Nos. 31 & 32, Bedford-street, Strand, W.C., on the 4th inst., Col. Stanley G. Bird, C.B., in the chair.

The minutes having been read, the Secretary, Mr. R. S. Henshaw, read the Report and Accounts. The Report stated that during the period under review, the Company had received notice of 1,037 accidents. The slight reduction in the premium was attributable to the Directors declining to renew some heavy risks which experience had shown to be unremunerative. A reduction in the loss ratio amounting to about 10 per cent., coupled with the fact that new business had exceeded that of last year by nearly 25 per cent., showed that the judgment of the Directors had been discreetly exercised. Notwithstanding the fact that it had been possible to give members on renewal a larger rebate than in the previous year the funds of the Company had been augmented.

The Chairman, in proposing that the Report and balance-sheet be received and adopted, said that this time last year they proposed to classify the risks, that was to say, to make a very great reduction in the rate of the premium they were asking. They thought it was not fair that they should make the same reduction to the whole of the policy-holders, but that those who had good risks ought to have a greater advantage than those who, possibly, were not so lucky or had some very bad risks, and it was indicated at that time that they proposed to take off 33⅓ per cent. In very good risks they had allowed the full amount of 33⅓ per cent., and in others 20 per cent., and so on, by a graduated scale until they came to the very bad risks, and in those cases they had made no reductions at all. Some they had increased, others decreased, and one or two they had said good-bye to. Taking the figures for 1902, the amount of premiums was somewhat smaller than it was in the previous year, and that was accounted for by the fact that they had to decline to renew some risks amounting altogether to nearly 3,000*l.*, but they had almost overtaken that loss by the extra amount of new business they had been able to do. The policy-holders had appreciated the benefits of this reduction, and many of the old insurers who had insured with the Company before and left had come back again. It was hoped that the new business would be very much more remunerative than the old. The difference in the expenditure between 1901 and 1902 was very nearly 3,000*l.* While other companies had been obliged to harden their rates, the Builders' Company had been in the happy position of building up a reserve and giving very consistent and steady rebates ; and that had been going on not for one year, but for several. In 1899 the rebate that was allowed to policy-holders was 3,675*l.*, and in 1,902*l.* the rebate that was allowed was 6,300*l.*; as to the Act, when the company started, it was suggested that they were going to have an arbitrator to work between employers and employed and that they would not require a lawyer. Every week some fresh case was started in the Law Courts, and the Law Courts put a different construction upon the Act—or, rather, enlarged the scope of it. We were getting more "Judge-made law" pretty well every week, and it made the Act much more terrible in its effect. The number of new policies issued last year was 48 per cent. more than for the corresponding period in 1901, while the premium was 25 per cent. more. Since the beginning of this year 82 per cent. of the proposals accepted had been completed, which was 12 per cent. more than for the same period of 1902.

Mr. G. J. Newson seconded the adoption of the Report and balance-sheet, and the motion was agreed to.

The next business was the re-election of the retiring Directors, Mr. H. H. Bartlett, Sir John Mowlem Burt, Mr. F. J. Dove, Mr. Thos. F. Rider, and the Chairman.

Mr. Thomas Lascelles proposed that those gentlemen be re-elected Directors of the Com-

pany. Mr. Ansell seconded, and the resolution was carried unanimously.

Mr. G. J. Newson moved, and Mr. Ansell seconded, that the directors be paid their fees, and this was also agreed to.

Mr. Jones proposed and Sir John Burt seconded, that Mr. Charles Fox be re-elected auditor, and that he receive the same fee as formerly. This having been agreed to, a vote of thanks was passed to the Chairman and the proceedings terminated.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday afternoon in the County Hall, Spring-gardens, S.W., Sir J. McDougall, Chairman, presiding during the first part of the sitting.

New Chairmen.—The first business was the election of the following new Chairmen for the ensuing year, *i.e.*, Lord Monkswell, as Chairman; Mr. E. A. Cornwall, Vice-Chairman; and Mr. R. A. Robinson, as Deputy Chairman.

Loans.—On the recommendation of the Finance Committee it was agreed to lend Poplar Borough Council 19,473*l.* for paving works; Kensington Borough Council 27,500*l.* for widening part of High-street, Notting Hill; Poplar Union 4,600*l.* for land and premises for a receiving house for children; Shoreditch Borough Council 1,270*l.* for sinking an artesian well at the public baths, Hoxton; and St. Olave's Union Guardians 48,000*l.* for cottage homes.

Subway for Tramways, Holborn to Strand Thoroughfare.—After discussion it was agreed to spend 208,000*l.* in respect of the construction of the tramways subway authorised by the London County Council (Subways and Tramways) Act, 1902, between Southampton-row and the Victoria Embankment.

Proposed New Asylum.—In accordance with Standing Orders, it was stated that the recommendation to expend 569,500*l.* on the erection of a new asylum on the Horton Estate would stand over for a week. The Asylums Committee propose to appoint Mr. G. T. Hine as architect.

The Chairman (Lord Monkswell) said he was not satisfied that the Council had, in the Report before it, all the detailed information which could be given, and he should rule that a more detailed Report must be brought up next Tuesday, so that the members might have a week to consider it before discussing it.

Tramways: Reconstruction for Electrical Traction.—The following recommendations of the Highways Committee were agreed to:—

"(*a*) That the tender of the British Westinghouse Electric and Manufacturing Co., Ltd., be accepted for the supply, for the sum of 5,367*l.* 14*s.* 2*d.*, of the high and low tension and exciter switch-boards required for use at the sub-stations to be established at the Elephant and Castle, New Cross, and Camberwell, respectively, in connexion with the reconstruction for electrical traction of the London County Council tramways.

(*b*) That the British Westinghouse Electric and Manufacturing Co. be allowed to sublet the following portions of the work in connexion with the manufacture and erection of the switch-boards, referred to in the foregoing resolution, to the undermentioned firms (or to such other firms as may be approved by the engineer under the contract), namely (1) to Messrs. Kelvin & James White, Ltd., the manufacture of the low-tension indicating watt-meters; and (2) to Messrs. W. T. Glover & Co., the manufacture of the high and low tension cables for the switch-boards."

Workmen's Trains.—The Housing of the Working Classes Committee reported on this subject. They have prepared a digest of the improvements which have been effected in the past few years in the provision of workmen's trains by the various railway companies. As a result of their action also, clauses have been inserted in several "Tube" Bills binding the promoters to provide adequate early morning trains. The Council's model provision insists on the companies issuing "at all stations workmen's tickets available for any train starting from the station at which such ticket is issued and timed to arrive at any station at or before eight o'clock a.m. at fares which shall not exceed one penny for a single journey and twopence return for any distance on the railway." These tickets will be obtainable either on the morning when they are required, or the previous day. The Committee claim that "both by procuring clauses in special Acts and by the use of the machinery provided by the Cheap Trains Act, 1883, a great deal has been done by the Council in the last five years to increase the facilities enjoyed by workmen who require to travel by rail in London."

Tube Railways.—In moving the reception of the Parliamentary Committee's Report, Mr. Radford called attention to the paragraph dealing with the action proposed to be taken by the Government on the London Underground Railway Bills. The Committee had considered the decision of the Government to allow the Charing Cross, Euston, and Hampstead, Great Northern, Piccadilly and Brompton (Various Powers), Baker-street and Waterloo, and the City and North-East Suburban Electric Railways to go forward, and considered that all the Bills should be postponed. They asked the President of the Board of Trade to receive a deputation on the matter, and they had now received a letter from him refusing their request.

Mr. W. H. Dickinson said the matter was of supreme importance, and he protested in the strongest terms against the action of the Government in taking these four Bills out of the purview of the Royal Commission which had been appointed. The Government must have taken this step either under a total misapprehension as to the contents of the Bills, or because some pressure had been brought to bear on them by the capitalists who were behind the Bills. The object of these four Bills was to hand over the powers that had already been given under them to one Company, and that one Company would control a capital of 33,000,000*l.* and sixty-eight miles of lines. It would create a huge monopoly, and a new departure would be created with regard to railway legislation. It was certainly a matter which should be inquired into by the Royal Commission, and he trusted the matter would be brought before Parliament.

The Report was adopted.

Convalescent Homes for Children.—Replying to Sir W. J. Collins, Mr. Piggott, the Chairman of the Parks Committee said the principle of using some of the mansions in the Council's parks as Convalescent Homes for children had been approved, and certain houses had been suggested in Committee for that purpose.

The Council adjourned shortly after seven o'clock.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Hampstead.—A modification of the conditions upon which consent was given to the erection of residential flats, with projecting one-story shops and bay windows, on the west side of Finchley-road and east side of Fortune Green-lane, Hampstead (Mr. W. H. Pearce).—Consent.

Westminster.—An iron and glass shelter in front of Bolney House, Ennismore-gardens, Westminster (Messrs. Aldin Brothers & Davies for Mrs. Tate).—Consent.

Lewisham.—Retention of a conservatory in front of The Cedars, Sydenham Hill (Mr. C. A. Body).—Consent.

Wandsworth.—A building on the western side of Roehampton-lane, Putney, northward of Manresa House (Mr. D. Blow for Mr. H. Smith).—Refused.

Line of Frontage and Artisans' Dwellings.

Hackney, Central.†—Blocks of dwellings on the south side of Dalston-lane and east side of Navarino-road, Dalston (Messrs. N. S. Joseph, Son, & Smithem for the Four per Cent. Industrial Dwellings Co., Ltd.).—Consent.

Dalston.—Blocks of intended dwelling-houses, to be inhabited by persons of the working class, and proposed to be erected, not abutting upon a street, on a site at the corner of Dalston-lane and Navarino-road, Dalston (Messrs. N. S. Joseph, Son, & Smithem for the Four per Cent. Industrial Dwellings Co., Ltd.).—Consent.

Width of Way.

Horton.—The re-erection of dwelling-houses on the east side of Wilson-street, Shoreditch, to abut upon Whitecross-place (Mr. A. Whitelaw for the London and North-Western Railway Co.).—Consent.

Width of Way and Line of Frontage.

St. George, Hanover-square.†—Erection at No. 24, Norfolk-street, St. George, Hanover-square, of a three-story bay window next Norfolk-street; a projecting porch, with two-story bay window over, next Green-street; and an extension of the existing balcony next Park-lane (Mr. W. Flockhart for Mr. H. J. Duveen).—Consent.

Deviation from Certified Plans.

Marylebone, West.—Deviations from the plan certified by the District Surveyor, under Section 43 of the Act, so far as relates to the proposed re-erection of an addition at the rear of No. 63, Upper Berkeley-street, Marylebone (Messrs. Mullett, Booker, & Co. for Mr. S. Quick).—Consent.

Formation of Streets.

Wandsworth.†—That an order be issued to Messrs. H. E. Milner & Son sanctioning the formation or laying out of new streets for carriage traffic on the Furzedown Park estate on the south-east side of Rectory-lane, Tooting (Sir Charles Seely).—Consent.

*** *The recommendations marked † are contrary to the views of the Local Authorities.*

TRIBUNAL OF APPEAL UNDER THE LONDON BUILDING ACT, 1894:

A PICCADILLY BUILDING SCHEME.

THE Tribunal of Appeal under the London Building Act, 1894, sat at the Surveyors' Institution, Westminster, on Friday last week, to hear an appeal by Mr. John Lorden under Section 13 (Sub-sections 3, 4, and 5) and Section 43 (Sub-sections 1, 2, and 3) of the London Building Act against the determination of the London County Council by their resolution of January 27 last, "that the Council, in the exercise of its powers under Sections 13 and 43 of the London Building Act, 1894, do not sanction certain deviations from the plans certified by the District Surveyor under such sections of the Act, so far as relate to the proposed erection of a building on the site of Nos. 198, 199, and 200, Piccadilly, and Nos. 2, 3, 4, and 5, Church-place, as shown upon the plans submitted with the application of Mr. R. Sawyer on behalf of Mr. J. W. Lorden."

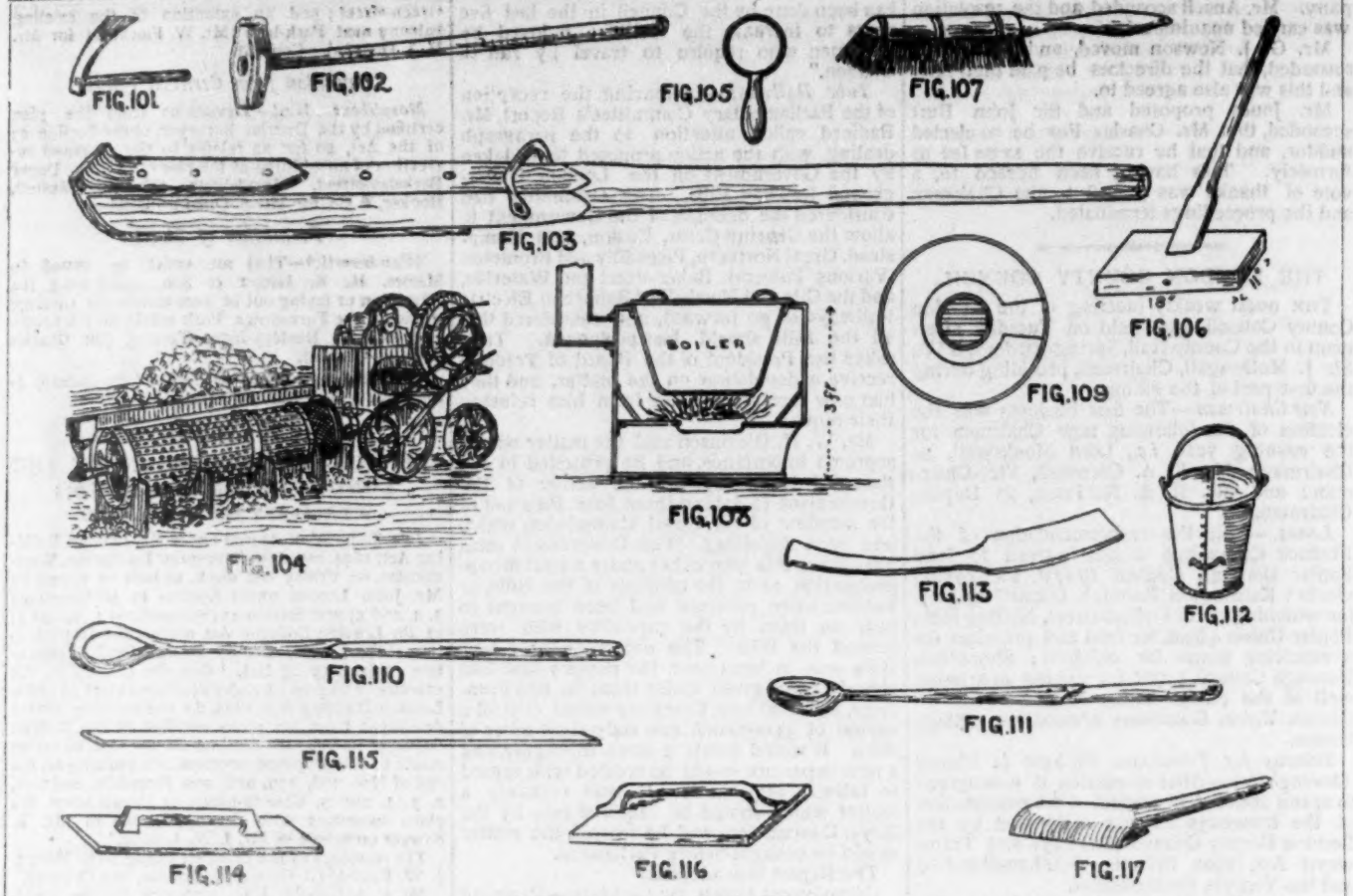
The members of the Tribunal sitting were Messrs. J. W. Penfold (in the chair), Hudson, and Gruning.

Mr. C. A. Russell, K.C., appeared for the appellant, and Mr. Godfrey (from the Solicitor's department of the London County Council) for the respondents.

The site, Nos. 198, 199, and 200, Piccadilly, and Nos. 2, 3, 4, and 5, Church-place, forms part of a larger site lying to the west of and extending from the Geological Museum in Piccadilly, along Piccadilly to the corner of Church-place, then occupying the whole eastern side of Church-place, and then returning along Jermyn-street to the Museum. The whole of the space is being, or has been, cleared for the purpose of erecting buildings upon lease from the Crown and under building agreements granted by the Commissioners of His Majesty's Office of Woods. The appellant's building agreement contained a clause requiring that the elevation facing Church-place shall be "of handsome architectural design" and form part of one general elevation of building extending from the Geological Museum in Piccadilly to the Geological Museum in Jermyn-street." In November last Mr. Sawyer, appellant's architect, applied to the London County Council for permission to deviate from the plans certified by the District Surveyor under Section 43 of the Act. This was refused. On behalf of the appellant it was submitted that the proposed raising of the new building to a height exceeding that of the buildings formerly on the site would not materially lessen the air space in Church-place, inasmuch as the churchyard opposite is practically an open space above the line of the old buildings. Further, to set back the line of frontage to 10 ft. from the centre of Church-place above the height of the old building would be of no real advantage; on the contrary, it would spoil the façade. To form an open space 10 ft. in width along the south side of the site above the height of the old buildings is not necessary or required in view of the large open space at the rear of the proposed new building, which far exceeds the air space called for by the Act at the rear of a building.

Mr. Andrews intimated that while the London County Council objected to the plans as a whole, they regarded the scheme for providing air space at the rear as particularly objectionable. Under the scheme there would be inadequate outlet for the air, a passage practically corking up a bottle-necked exit. A modification in the latter would materially affect the consideration whether the air space was sufficient as a whole.

Mr. Sawyer, architect to the appellant, gave evidence, and in reply to Mr. Russell submitted details of the scheme. The area of the site, he said, was 6,560 ft. super. The area of the open space at the rear of the new building at the first-floor level was 1,730 ft. super., and of the new building at first-floor level 4,830, while the area of the old building at the first-floor level was 4,220 ft. super. This left an excess of area of the new building over the old at the first-floor level of 610 ft. super. As to the cubic air space of the new building, the amount proposed to be provided at the rear above a line 16 ft. above the mean level of the pavement in Church-place to the level 80·5 length, 51·4 height, 21·6 depth = 88·751. With the triangular space the



Illustrations to Student's Column.

figures were :—59·0 length, 12·3 depth, 6·3 height—2,259. This made a total of 91,010 cubic ft. The open cubic air space required by the Act above a line of 16 ft. above the mean level of the pavement in Piccadilly was 58·2 length, 10·0 depth, 48·9 height—28,356; triangular space, 58·2 length, 14·4 depth, 28·9 height—11,983; total, 40,339 The cubic feet of air space provided in excess of that required by the Act was, the witness contended, 50,671.

In the course of a prolonged discussion, an alternative for increasing the air space at the rear of the building was referred to, but was not accepted by the appellant. Eventually, the further hearing of the appeal was adjourned mainly with the view of giving the appellant an opportunity to revise this part of the scheme, if thought fit.

The Student's Column.

BUILDERS' TOOLS AND THEIR USES.

CHAPTER 6.

Paviors' Tools, including Asphalter.

THE following tools and appliances are employed by the pavior, those of the asphalter being described separately :—

1. Axe Hammer
2. Stone-breaking Hammer
3. Handspikes and Levers
4. Rake
5. Broom
6. Stone Breaker
7. Ring-gauge
8. Roller
9. Scraper

In addition to the foregoing, the pickaxe, lines and pegs, mattock, maul, rammer, shovel, spade, crow and pinching bars, rods, squares, levels, mash hammer, screen and sieve, trowel, straight-edge, mallet, &c., are also used, but they have been already described in the previous chapters.

The Axe Hammer is almost entirely used for picking up and setting square setts, paving pebbles, &c., the chisel end being required for lifting, and the hammer head for tapping the stones into their places (fig. 101).

The Stone-breaking Hammer employed by the breaker is of two sizes, with small cast-steel heads fixed at the end of a long, straight-grained, and flexible ash stick. The weight of the first is about 1 lb., with 6 in. head, and handle 1 ft. 6 in. long. The other weighs 2 lbs. to 5 lbs., with 7 in. head, and handle 2 ft. 6 in. long. The sizes of the larger stones are reduced with the latter before breaking them into the proper dimensions for road-metal fig. 102).

Handspikes and *Levers* are used for lifting and setting square setts, blocks of stone, &c., and raising and fixing heavy articles generally. The lever is properly a platelayer's implement, for lifting and arranging tram-lines, &c., between which square setts are laid. It is of ash, some 7 ft. long, squared at the end, and shod with iron, which is sometimes notched like a crowbar (fig. 103). Handspikes, or marline-spikes, are similar to levers, but are not shod with iron.

The *Rake* is so familiar that it is unnecessary to describe it beyond saying that it is useful to the pavior for raking gravel, and that the solid end bolster teeth vary in number from six to eighteen, the handle being of ash, about 5 ft. long. The rake employed for filling in ruts and hollows in the surface of roads, should have very large prongs, ¾ in. apart, fixed into a wooden head about a foot long.

The *Bass Broom*, with coarse bristles, is requisite for sweeping up the débris and rubbish off the surface of the part just paved, as well as for brushing in the sand and gravel thrown over granite and pebble paving.

The *Stone Breaker* may be not inaptly described here. Stone-breaking machines were first introduced to reduce the great expense of breaking by hand, though the wear and tear is very considerable, sometimes rising as high as 60 per cent. of the first cost of the machine in one year. Hand-broken stone, being divided by a blow and not by gradual pressure, is more sharply fractured than machine-broken stone, which is frequently flaky or with rounded edges and cracked. One of the best machines is probably Baxter's patent knapping-motion stone breaker, used for crushing stone and producing road metal (fig. 104). The stone to be broken is carried to the wooden platform at the side, and put into a hopper. The material is crushed into various sizes, which then pass into the inclined perforated cylinder, coming out of the graduated holes according to the size of the diminished pieces, into stalls or divisions below, from whence it is wheeled to the works. The apparatus is worked by a belt from an engine erected in a temporary shed behind. One of Baxter's 16 by 9 (size at the mouth of machine) stone breakers, driven by a 5 h.-p. engine, and running with a speed of 275 revolutions per minute, will produce 8 tons of road metal (size 2½ in. ring) per hour, at a cost of 4½d. per ton.

The *Ring-Gauge* is useful for testing the size of the broken stones, which are usually specified to be capable of passing in all directions through a ring of 2½ in. (or other gauge) internal diameter (fig. 105).

The *Roller* consolidates the gravel, asphalte, or other paving material, and this should be done when the stuff is first laid down. An ordinary cast metal hand, or garden, roller may be used 2 ft. in diameter, and 2 ft. in width, and weighing about 4 cwts. A water ballast roller is a hollow cylinder, filled with water by means of a plug at the side. A 4-cwt. water ballast hand roller filled with water would weigh 8 cwts. A horse roller is usually much larger and heavier, being fitted with shafts for pony or light horse power. For extensive and important surfaces a steam roller, weighing from 10 tons to 15 tons, is indispensable.

A *Scraper* is necessary for keeping roads properly and free from mud. It should be of iron, 6 in. deep and 18 in. long, slightly curved at the extremities to prevent the escape of the liquid mud, and with a long wooden handle. Road-scraping machines, as well as sweeping machines, with a long cylindrical revolving brush (invented by Sir Joseph Whitworth), are useful where there is much work in keeping road surfaces in order.

Asphalter.

The following tools and utensils are employed by the asphalter :—

1. Concrete Beater.
2. Lines and Pegs.
3. Brush.
4. Cauldron.
5. Hammer.
6. Stirrer.
7. Gauges.
8. Ladle.
9. Bucket.
10. Spatula.
11. Handfloat.
12. Floating Rule.
13. Sieve.
14. Beater.
15. Small Beater.
16. Hand Roller.

The author is indebted to the instructions issued by a well-known asphalt company in their little book for most of the information regarding the appliances of the asphalter and mode of laying.

Perhaps it will be best to describe the general process of laying asphalt, dilating upon the tools as we go along, in the order they are used.

For pavements, &c., a concrete foundation is first laid, which is levelled and rammed solid with a *Concrete Beater* (fig. 106), the bottom of which is made of beech and the handle of ash the area having first been set out with *Line and Pegs*. In humid weather dry sand, or some

cinder dust, should be sifted over the concrete. Either of these will take up part of the moisture, for it is important that the concrete should be dry, as well as firm and solid, before the asphalt is applied. Before applying the asphalt this sand or dust must be brushed off, the most convenient *Brush* to use being of the form shown in fig. 107, having coarse hair, 2½ in. long. The *Cauldron* for melting the asphalt is shown in section in fig. 108, and fig. 109 gives its plan. The furnace is made of 10-gauge common-plate iron, with a 6 in. lining all round, the boiler being of ¼ in. best plate iron, with ⅜ in. Low-moor iron bottom. The cauldron is 3 ft. high and 2 ft. 10 in. diameter, and it should be placed close to the work, as it is of importance that the asphalt should be very hot, that it may not only adhere firmly, but be spread more evenly. Peat and oak wood should be issued as a fuel for heating, coal being objectionable on account of the smoke it creates, whilst coke should never be used, as it is injurious to the material and destructive to the cauldron.

The asphalt, having been broken with a *Hammer*, is then put into the boiler, employing 1 lb. of mineral tar to 1 cwt. of asphalt to properly flux the latter, the quality of tar, however, varying according to circumstances, a larger proportion being required at first to start the fusion. The asphalt and tar are mixed together with the *Stirrer* (fig. 110), the handle being similar to that of the ladle, and the loop should be made of 1½ in. by ⅜ in. iron, tapered off to ¼ in. on the outside edge, 3½ hours being occupied from the first lighting of the cauldron to melt the entire mass with which it is filled. The stirrer is 5 ft. long.

Having selected the *Gauges* (or long strips of pine, about 2 in. wide, required to form boundaries for the laying of the asphalt) suited to the class of work to be executed, place one with bricks or other weights bearing upon its outer edge that there may be no irregularity in the thickness of the asphalt, parallel to one of the sides of the concrete surface, which should be perfectly dry, to be covered, at a distance of 3 ft., which will form the width of the several layers of pavement or flooring. Asphalt is usually laid in squares, partitioned off with wooden gauges, which are afterwards removed. In this space the spreader kneels, and as the asphalt or mastic, which should be quickly conveyed in a viscous state as hot as possible by the cauldron man in a warmed *Ladle* (fig. 111, the ladle being of best charcoal plate iron of 10 gauge, hollowed out 4 in. deep, and the socket, shank part, and strap to be made of 1½ in. by ⅜ in. best iron; the handle of ash or holly), or in a previously heated iron *Bucket* (fig. 112, made of 20 gauge charcoal plate iron, with an additional iron handle at the side for assisting in pouring out, the bucket being hot), is poured down, it is to be spread and rubbed with the *Spatula* (fig. 113, made from an oak stave of a cask), or *Handfloat* (fig. 114, of deal, free from knots, and with an oak handle), held in the right hand, while the left is bearing hard upon the other part of it, the spreader's knees being protected by sackcloth caps when kneeling. To facilitate this work an ordinary *Floating Rule* or straight-edge (fig. 115), from 3 ft. to 12 ft. in length, may be first used in a sawing direction from left to right over the asphalt, which will level it to the thickness of the gauge, and any unevenness on the surface may be easily corrected by the spatula or handfloat.

Just before the asphalt becomes set, a third workman should sift gently over it from a dust *Sieve* (of copper wire, 20 in. diameter, and twenty-four meshes to the inch) some surface powder composed of equal parts of silver sand and slate dust, and immediately afterwards rub it upon the asphalt with the handfloat, and if this work is well executed it will be as even as a piece of rubbed slate.

When the first layer of pavement is finished, the adjoining space should be covered at a later period. The object of leaving alternate vacant spaces is that the workman employed in rubbing may not have occasion to kneel upon any part of the asphalt until cool; nor should the gauge be removed until the asphalt has become set.

Next this vacant space two gauges are laid down at the same distance apart, and weighted as before mentioned. The space between them must then be covered with asphalt, and rubbed in the manner before described. In about an hour the asphalt will have become quite firm and cold, when the gauges should be carefully removed by a blow from a broad-faced hammer, or eased off with the point of a knife.

When the surface is intended to be gritted, a workman should immediately follow the spreader, moderately and evenly distributing from a sieve a clean grit of a size according to the nature of the work. The grit will, if heated, be found to unite more firmly to the asphalt, which can readily be done in small works upon the lid of the cauldron. A double-handled *Beater* (fig. 116, of Honduras mahogany—the bottom, or striking part, should be slightly bevelled from the centre) is to be used, with which the grit should be stamped vertically, with rapidity and much force, into the surface of the asphalt. A *Small Beater* (fig. 117, also of mahogany) is sometimes employed for beating the grit into the asphalt in corners, or for making good the joints round a sink, drain trap, &c.

A *Hand Roller*, as formerly described, is very serviceable for rolling and consolidating tar and asphalt pavements.

Correspondence.

NEW ART IN STAINED GLASS.

SIR,—I cannot plead guilty to any unfairness in selecting for criticism from Mr. Sparrow's paper the single point of leading; for if we once allowed it the importance claimed by him, so as to require figure-work to be thereby dominated, much as a geometrical pattern must be, we shall have introduced into the art a change of principle that will lead those who adopt it very far indeed. It is a revolution, and it is the one new principle upon which Mr. Sparrow insisted.

So long as design in stained glass is concerned with arrangements of abstract lines, as in Early grisaille, in which the painting is merely a sort of diaper upon the pattern given by the leads, these latter perform a humbly ornamental as well as useful function; but the more of nature comes into the design, the less it is possible to rely upon the leading as an explanatory factor. Do what you will with it—widen it, thicken it, throw it into the outlines, yet the eye steadily refuses to accept it as other than a mechanical device for holding bits of glass together. As a line to draw with, it is both ineffective and coarse; regarded as a constructive expedient, it is found to play an unobtrusive part in the general effect of the window, much as the grey network of joints between the tesseræ does in the case of mosaic.

May I humbly hope that Mr. Sparrow will now admit that though I have plunged into the very "depths of degradation" in "servile imitation of all the weaknesses and failings in old work," my degradation is yet not without motive, nor my servility without sense. F. C. EDEN.

OBITUARY.

PROFESSOR T. ROGER SMITH.—We much regret to announce the sudden death, on Tuesday last, of Professor Thomas Roger Smith, of Temple-chambers, Temple-avenue, E.C., senior member of the firm of Messrs. T. Roger Smith & Son, and father of Mr. R. Elsey Smith, Professor of Architecture and Building Construction, King's College, London. Mr. T. Roger Smith was admitted as an Associate of the Royal Institute of British Architects in 1856, and elected a Fellow in 1863; he was President of the Architectural Association in 1860-1 and 1863-4, and for some time was a member of the Council, Royal Institute of British Architects. He was Professor of Architecture at University College, London, District Surveyor for West Wandsworth, President of the British Institute of Certified Carpenters, and Examiner in Carpentry and Joinery, and in sanitary building construction, to the Carpenters' Company. In May, 1900, he was appointed one of four members of the Royal Institute as a Committee to meet a Committee of four of the Surveyors' Institution as a Joint Committee to take such steps as they might deem necessary for securing an amendment in the Law of Ancient Lights, and was subsequently appointed Chairman of that Joint Committee. Last February he was re-elected a member of the Council of the Sanitary Assurance Association; and on May 5 of last year, at the annual general meeting of the Royal Institute, he was re-elected a member of the Statutory Board of Examiners under the London Building Act, 1894, and other Acts, of which Board he was Chairman in 1899-1900. He also was appointed in succession to the late Professor Banister Fletcher as Chairman of the Joint Committee for the Trades Training School of the Carpenters' and other allied City Companies. He acted as assessor in several important competitions, including those for new schools for the Northampton School Board, 1891; the Bedford General Hospital, 1896 (Messrs. Stephen Salter & Adams, first premium); and the Municipal Technical Institute and Public Library at Eastbourne, 1900 (Mr. P. A. Robson, first premium). His firm were amongst the architects nominated in 1893 to compete for the North London Polytechnic, and in 1901 for the reconstruction and enlargement of the Royal Infirmary at Hull. Professor Smith was architect of the North London Hospital for Consumption, at Hampstead, begun in 1880, and enlarged by Messrs. T. Roger Smith & Son, twelve years afterwards (see the illustrations published in the *Builder* of December 25, 1880, and December 31, 1892); of the Ben Jonson Board School, Stepney, 1872; the Sanatorium at Reedham, illustrated in our number of July 14, 1883; and of the new laboratories at University College, London (illustrated by us on June 3, 1893), of which the engineering and electrical "sides" were opened in May of that year. The firm of Messrs. Roger Smith & Gale prepared the plans and designs for a house, and for some stabling at Otford, Kent, noticed in our reviews, "Architecture at the Royal Academy" of June 19, 1886, and June, 29, 1889. Professor T. Roger Smith was author of a "List of Curves in Complete Sets of Twenty-three Templates," published in February 1901, by Messrs. Cassell & Co., and of a large number of papers and lectures read and delivered at Carpenters' Hall, University College, London, Sheffield and elsewhere, upon various topics relating to the history, science, and practice of architecture and building. Of his papers we may particularly mention those upon "Sanitary Building Construction and Planning: Soil and Local Physical Conditions;" "Ventilation, Warming, and Lighting;" "Timber and Timber Structures;" "Terra Cotta;" "Building on Paper;" "Sir Christopher Wren;" "Oriental and Indian Architecture;" "English Halls and Mansions;" "Westminster Abbey;" "Exeter Cathedral;" and "Canterbury Cathedral" (incompleted owing to his decease)—of some of which reports or abstracts have from time to time been printed in our columns. He also wrote for "Weale's Series" a valuable little book on acoustics in connexion with architecture, especially as affecting the planning of rooms for music.

MR. C. B. TROLLOPE.—We regret to announce the death, on the 2nd inst. in his seventy-third year, of Mr. Charles Brown Trollope, senior partner of the firm of Widnell & Trollope, of 20, Tothill-street, Westminster. He was a pupil of the late Sir Henry Hunt, and upon completion of his articles in 1852 commenced practice as a surveyor in partnership with the late Mr. F. G. Widnell. In the course of his long professional career he was engaged on the following public buildings and works, in addition to a large private practice:—The Houses of Parliament (when rebuilt), the Royal Courts of Justice, the Natural History Museum at South Kensington; the fortifications at Dover, Plymouth, and Pembroke; the Church House, Dean's Yard; and a number of considerable works for the Admiralty, War Office, Office of Works, and various public bodies. Mr. Trollope had been in failing health for some time, and for the last few years had been unable to take an active share in the business of his firm.

Mr. J. SWINBURNE.—The death took place on the 5th inst. of Mr. Joseph Swinburne, architect, Newcastle. Mr. Swinburne, who was only thirty-two, was the son of Mr. J. F. Swinburne, of Birtley, and was an architect with Messrs. Oswald & Sons, Newcastle.

MR. E. H. SHORLAND.—We regret to announce the death of Mr. E. Hooper Shorland, of the firm of Shorland & Brother, of Manchester, well known as heating and ventilating engineers. Mr. Shorland died at his residence Brooks's Bar, Manchester, on the 9th inst. The business will be carried on by Mr. F. H. Shorland, the surviving partner.

GENERAL BUILDING NEWS.

BAPTIST CHURCH, SOUTH BENWELL.—On a plot of ground adjoining the Baptist Church Hall in Buddle-road, South Benwell, new premises are to be erected. The plans, which have been prepared by Mr. Hanson, of South Shields, show an audience hall capable of seating 800 people, and a number of rooms around and beneath. The scheme is estimated to cost about 5,000*l*.

ADDITIONS TO ULVERSTON PARISH CHURCH, LANCASHIRE.—Recently a good deal of renovating work has been carried out at the ancient parish church of Ulverston, and now the parishioners have decided upon a scheme for extending the chancel. Plans were submitted by Messrs. Austin & Paley, of Lancaster, and the estimated cost of the work is 1,550*l*.

SCHOOL, BEDMINSTER.—A new school, for the care and education of mentally deficient children, has been constructed, at the instance of the Bristol School Board, in Orchard-place, Stillhouse-lane, Bedminster. It is constructed of pennant stone, with Bath stone facings. There are a central hall and six classrooms, and the floors are laid with wood blocks. The architect is Mr. W. L. Bernard. Accommodation is provided for sixty children.

VOLUNTEER PREMISES, LIVERPOOL.—New headquarters for the Liverpool Scottish Volunteers are to be erected in Fraser-street, opposite the Shakespeare Theatre. The new building, of which Messrs. Woolfall & Eccles are the architects, will

have a brick front, with red brick and stone dressings. The large drill hall will extend through from Fraser-street to Camden-street, and the offices will include armoury, quartermaster's stores, lecture-room, gymnasium, restaurant, baths, dressing-rooms, kitchens, &c., caretaker's rooms, honorary members' room, officers' mess, dressing-room, and billiard-room; and for the men, large room (canteen), large dressing-room, and billiard-room.

RESTORATION OF CHESTER TOWN HALL.—A Local Government Board inquiry was held at Chester Town Hall on the 3rd inst. by Mr. M. K. North, M.Inst.C.E., Local Government Board Inspector, with reference to the application made by the Chester Town Council for sanction to borrow 5,707*l.* in respect of the restoration of the town hall. Mr. Lockwood is the architect.

OFFICES, LIVERPOOL.—New offices for Messrs. Elder, Dempster are to be erected in Water-street, next to Tower Buildings, and are to be known as Colonial House. The dimensions of the building are as follow: frontage to Water-street, 81 ft. 6 in; frontage to Tower Gardens, 203 ft., 6 in.; frontage to Old Churchyard, 74 ft. 6 in. The Tower Gardens front has been set back at the Old Churchyard End so as to increase the width of Tower Gardens. The ground floor, as well as a portion of the floor below and the mezzanine floor, is intended for use as Messrs. Elder, Dempster, & Co.'s head offices. Three high-speed electric passenger elevators will be provided (two at the Water-street entrance, and one at the Old Churchyard entrance). The entrance corridor and hall will be lined with polished marble. Two stone staircases will run between all floors. The building will be warmed throughout by means of hot water on the low-pressure system, as well as by fireplaces. The contractors are Messrs. Tomkinson & Son. Messrs. Briggs & Wolstenholme, F. B. Hobbs, and Arnold Thornely, Liverpool, are the architects.

CONVALESCENT HOME, HARROGATE.—The Northern Police Convalescent home at Harrogate is expected to be opened in May. The home will accommodate thirty-two policemen, and has an isolated wing, with verandah, where convalescent cases requiring special care and nursing can be received. The house will contain sitting rooms, dining hall, smoke room and library, bedrooms of various sizes, bath-rooms, kitchens and rooms for the staff, and will have a garden, with bowling-green and cricket ground. The architects are Messrs. Chorley, Connon & Chorley, Leeds.

WORKMEN'S CLUB, PERCY MAIN.—The Percy Main Workmen's Club Co.'s new premises have just been opened. The buildings consist on the ground floor of two smokerooms and billiard-room for two tables, also bathroom and lavatory accommodation. In the basement is arranged a cellar. On the first floor a large reading-room and committee-room are provided, whilst on the second floor is a suite of rooms for the manager. In the rear is a quoit ground, and space for future extension. The contractor was Mr. Robson, of Tynemouth. The fittings were made by Mr. Langlands, joiner, also of Tynemouth. The architects are Messrs. Marshall & Tweedy, Newcastle.

MISSION HALL, BRISTOL.—The new Buckingham Hall, Hotwell-road, Bristol, was opened on the 5th inst. The building has been erected by Mr. R. F. Ridd, from plans prepared by Messrs. Oatley & Lawrence. Externally the walls are faced with local red stone, with freestone dressings. The hall will seat about 550 persons.

EXTENSION OF THE PUBLIC BATHS, WARRINGTON.—The public baths in Legh-street and Bath-street have just been extended and altered. Mr. Thomas Beasley has been the architect, and Mr. J. Dolan the builder. The second-class swimming-bath has been lengthened 10 ft. or 12 ft., the greatest depth being 4 ft. 6 in. and the shallowest part 3 ft. Hitherto there were only about six or eight slipper baths; now there will be thirteen for gentlemen and three for the exclusive use of ladies. The boiler-house has been considerably extended, and other necessary alterations and improvements effected. A new house, facing Bath-street, has been built for the manager. The contract for the work was 3,800*l.* Messrs. Thomas Bradford & Co. have done the engineering work, and Mr. Thomas Hughes, of Warrington, all the plumbing and painting.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.—Mr. F. S. Mayo, 11, Queen Victoria-street, E.C., has been appointed London agent for Messrs. Wood & Ivery, of the blue brick and tile works, Bromwich.

THE SANITARY INSTITUTE CONGRESS.—The twenty-first Congress of the Sanitary Institute will be held at Bradford on July 7-11 of this year. The Earl of Stamford is the President. Section I.—Sanitary Science and Preventive Medicine—will be presided over by Professor Clifford Allbutt; Section II.—Engineering and Architecture—by Mr. Maurice Fitzmaurice; and Section III.—Physics, Chemistry, and Biology—by Professor C. Hunter Stewart. The lecture to the Congress will be given by Mr. J. Slater. Eight technical conferences will also be held in connexion with the Congress, presided over by Councillor W. C. Lupton, Professor Thomas Oliver, Messrs. J. Spottiswoode Cameron, T. H. Yabbicom, C. Drabble, Mrs. Moser, Mr. James Kerr, and Mr. Isaac Young.

PUBLIC IMPROVEMENTS, SOUTHPORT.—On the 4th inst. Colonel A. C. Smith, R.E., an inspector of the Local Government Board, held an inquiry at the Town Hall into an application by the Town Council for power to borrow 14,000*l.* for the improvement of Nevill-street, the widening of the Promenade, and the construction of lavatories and shelter-houses adjacent to the pier. The case for the Corporation was opened by the Town Clerk, Mr. J Ernest Jarratt, to the effect that the Corporation were desirous of improving the junction of Nevill-street and the Promenade, a point which was very congested in the holiday time. A difficulty had hitherto existed owing to the presence of the Victoria Hotel Vaults, which abutted upon the lower portion of Nevill-street, a sunken roadway which divided the street from the Bath-street corner in two, and gave access to the lower promenade. The Corporation had recently arranged with the directors of the hotel company to purchase the vaults for 5,000*l.*, and now they proposed to fill up this sunken road, slightly lower the roadway abutting on the hotel premises, and make one continuous sweep upwards to the promenade. The Pier Company had agreed to set back the entrance to the pier 11½ ft., which would enable the Corporation considerably to widen the roadway and footpath of the promenade. The Corporation also proposed to provide shelter accommodation and lavatories fronting the lower promenade, and to widen the marine drive 10 ft. up to the point where the roadway makes a bay opposite the pavilion. Mr. R. P. Hirst, the Borough Engineer, gave details as to the work proposed to be done, and produced plans.

HOUSING OF THE WORKING CLASSES, BIRKENHEAD.—At the Birkenhead City Council recently, Alderman W. Getley, in proposing the adoption of the proceedings of the Health Committee, referred to the recommendation of the acceptance of the tender of Mr. Peter Tyson, Liverpool, to erect forty-two labouring-class houses in Mason-street and Green-lane for 6,040*l.*; and the acceptance of the tender of Messrs. Alex White & Sons, Liverpool, to erect twelve labouring-class houses in Getley-street at a cost of 1,915*l.* 16s. Alderman Getley said the houses in Mason-street would be two stories high, with separate entrances to each house from the footwalk, while the houses in Getley-street would be three stories high on the tenement principle. In Mason-street there were twenty-two three-room tenements, eighteen two-room tenements, and two one-room tenements, and the cost of the houses, including the site, would be 9,137*l.* If the houses were let at what similar houses in Liverpool were let, they would bring in a gross rental of 509*l.* 12s., the three-room tenements being 5s., two-room tenements 4s. 6d., and one-room tenements, 2s. 6d. After deducting expenses, the net revenue would be 339*l.* 14s. 8d., which would bring in a return upon the capital expended of 3*l.* 14s. 4½d. per cent. per annum. The Liverpool scheme showed a better return, but this was because in Birkenhead there was greater expense through putting in fire-proof floors. In Getley-street there were twelve tenements, the total cost, including the site, being 2,010*l.* 16s., which would bring in a gross rental of 109*l.* 4s., if the ground floor houses were let at 4s., first floor 3s. 6d. and second floor 3s. The net revenue would be 72*l.* 16s., and the return to the Corporation would be 3*l.* 12s. 5d. per cent. per annum, which was rather better than the return in Liverpool. The proceedings were confirmed.

THE BISHOPSGATE-STREET WIDENING.—The Improvement and Finance Committee of the Public Health Department at the Guildhall has been instructed to confer with the London County Council on the subject of the scheme for widening Bishopsgate-street Without between Angel-alley and the City's boundary to a uniform width of 70 ft. The City Engineer has drawn up plans, and if the scheme is carried into effect it is estimated that it will involve an outlay of at least 333,900*l.*

NOTTINGHAM INDUSTRIAL EXHIBITION, 1903.—The organisers of the Nottingham Exhibition, which opens in May next, under the management of Mr. C. I. Kiralfy, are now occupied with the erection of the various buildings, and laying out of the grounds adjoining Trent Bridge. The industrial and machinery halls are designed in the Oriental style, and the floors are planned so as to give the greatest possible facilities to exhibitors, many of whom have already applied for space. Arrangements, we are informed, are being made to devote a liberal portion of the space to the exhibitors in the various trades which this journal represents. Applications for space should be made to Mr. Charles I. Kiralfy, 19, Buckingham-street, Strand, London, W.C., where the plans of the Exhibition can be inspected.

CLOCK TOWER, TORQUAY.—The public memorial—which takes the form of a clock tower—raised to the memory of the late Squire Mallock, of Cockington Court, was inaugurated recently. The fabric takes the form of an Eleanor cross. Raised upon a circular base, approached by three steps made of Torquay marble, the main part of the structure is triangular on plan; one side facing down the Strand, at the head of which it has been erected; whilst the other two face Torwood-road and the Victoria Parade respectively. It is a Gothic structure, designed by Mr. John Donkin, architect, of Queen Victoria-street, E.C., and Bournemouth. It is built of Bath stone, except the quoins to the angle buttresses, &c., which are of Torquay limestone. The tower is enriched by carving, the work of Messrs. Harry Hems & Sons, of Exeter. The general contract has been carried out by Messrs. Bovey & Son, builders, of Torquay.

APPRENTICESHIP OF PLUMBERS.—An indenture or agreement of apprenticeship, framed by the Plumbers' Apprenticeship Board of London, has been adopted in substance by the National Association of Master Plumbers and the United Operative Plumbers' Association of Great Britain and Ireland, as well as by the London Master Builders' Association. The material points of agreement are—(*a*) the art of sanitary plumbing taught under the indenture is defined as "technical knowledge of water fittings and other sanitary appliances and skill to construct and adjust the same in such manner as to prevent the contamination of air or water in dwelling houses or other buildings by emanations from drains and sewers"; (*b*) the apprentice is required to attend approved evening classes of technical instruction; and (*c*) to attend periodical examinations in technical knowledge and workmanship during the term, the final examination qualifying for registration by the Plumbers' Co. or any statutory body established for maintaining a national register of plumbers in the public interest. Under the general provisions of the indenture other branches of trade may be taught, but it is required that the instruction in sanitary plumbing should conform to local and other regulations affecting the efficiency of plumbers' work in its sanitary aspects as defined. The form has been adapted to the requirements of Scotch law. Classes of instruction are provided by the local educational authorities and the practical branches of the examinations are conducted under the regulations of the Plumbers' Co. by joint boards, including employers and workmen.

VALUE OF LAND IN CHEAPSIDE.—The building site at the corner of Cheapside and Paternoster-row, occupying a ground area of 945 ft. super., and with a frontage of 71 ft., was let by auction on the 9th inst., on an eighty-years' building lease, at 11,150*l.* per annum, being at the rate of 1*l.* 4s. 4d. per ft. rental, which, capitalised at thirty years' purchase, would give a freehold value of 36*l.* 10s. per ft. Mr. Delissa Joseph has been retained to design the new buildings which are to occupy the site.

ST. BARTHOLOMEW THE GREAT, SMITHFIELD.—The three remaining bays of the cloisters of the old Priory have now been purchased and a faculty obtained for connecting them with the church by means of the original monks' doorway, which, though at present bricked up, can still be traced in the wall of the south ambulatory. An historical and descriptive lecture on the church will be given on Saturday, 21st inst., at 3 p.m., and repeated on Saturday, the 28th, at the same hour. The crypt and other portions of the church will be open for inspection without fee, but contributions will be invited towards the cost of the newly-acquired cloisters.—*Daily News.*

SOUTHAMPTON MASTER BUILDERS' ASSOCIATION.—The annual dinner in connexion with the Southampton and District Builders' and Decorators' Association (affiliated to the Southern Counties' Association) was held at the South Western Hotel recently, the President, Mr. Junior-Bailiff Cawte, presiding. The loyal toast having been honoured, Mr. Harry Stevens (past President) submitted "The Mayor and Corporation," Sheriff Hollis and Alderman F. A. Dansford replying. Mr. Costigan, Secretary London Master Builders' Association, next submitted the toast of "The Local Master Builders' Association." He described the building trade as the greatest industry in the whole country. The time had come when they, as employers, should assert their position with no uncertain voice, and it was only by strong combination that they could hope to oppose those who were now trying—in Parliament and the various public bodies—to attain their extermination as employers. Business nowadays was not a matter of sentiment, but a matter of hard fact. If employers did not have the common sense to take measures to protect themselves, they would find when the time came for the workmen to show their hands openly that they had to deal with a band of determined men who were carrying everything before them, not so much by their own inherent strength, as he was almost going to say by the contemptible weakness of employers. This led them to the question of combination, and in that they were shamed by the workmen they employed. He agreed that men had a perfect right to combine, but employers had also the same privilege to the fullest extent to curb all unreasonable demands.—Junior-Bailiff Cawte briefly responded, pointing out the advantages of the Association to all master builders. Mr. A. T. Doggrell (Hon. Secretary) also responded, and observed that the time of peace they had recently enjoyed was soon to be at end, for on May 1 almost the whole of the trades of Southampton would apply for an increase of 1d. per hour. It behoved them, therefore, to pull together. Mr. Councillor Bagshaw proposed "The health of the Borough Officials," and the Town Clerk (Mr. R. R Linthorne) and Dr. Lauder replied. In responding to the toast of "The Architectural Profession and other Guests," proposed by Mr

Harold Marshall, Mr. A. F. Gutteridge observed that the interests of the architects and builders could almost be considered mutual, and that any interference they might meet with with reference to building operations was not only an injury to one but to the other, as well as the public generally. At the present time an unfair interference with building operations was existing, inasmuch as the by-law which had been in operation in Southampton since the beginning of last year had tended to restrict building to a very large extent, and at the present time the architects had under consideration suggestions that had been made to meet several cases in which their applications had been refused by the Town Council, and which were felt as hardships by the trade. The architects were strongly of opinion that the Council would be prepared to meet them fairly in the matter. In fact, they were now waiting for the Council to nominate a sub-committee to meet them. There was no doubt, however, that the crux of the whole question lay with the Local Government Board. Councillor Blakeway responded as a guest. Other toasts included "The National Association and Kindred Associations," submitted by the chairman and responded to by representatives of the Bournemouth Association.

CAPITAL AND LABOUR.

NORTHERN BUILDING TRADE.—On behalf of the members of the Northern Counties' Federation of Builders, notices have been given to the bricklayers and labourers employed in the different towns on the north-east coast of a reduction of wages, the former from 10d. to 9d. per hour, and the latter from 6½d. to 6d. Certain alterations in working rules are also suggested. Notices have also been served on the joiners in the Tyne district of a reduction of wages from 10d. to 9d. per hour and an alteration of rules. The notices will expire on September 1. The chief alteration in the rules proposed is that disputes be referred to representatives of the masters and men, with ultimate reference to arbitration in case the parties cannot settle the difference.

BRADFORD PLASTERERS' DISPUTE.—There seems to be little chance of an amicable settlement being arrived at in the plasterers' dispute at Bradford, which has lasted since the beginning of the year. Fifty men left the city on the 9th inst., having obtained employment elsewhere, and the number remaining of those who were thrown out of work by the dispute has been reduced more than half.—*Leeds Mercury.*

LEGAL.

BREAKING UP STREETS.

THE Charing Cross and Strand Electricity Supply Corporation, of St. Martin's-lane, were summoned, at Bow-street Police-court on the 5th inst., for commencing certain works in the public streets without previously sending a notice describing the said works to the Westminster City Council.

Mr. de Fonblanque, representing the City Council, said Section 14 of the defendant company's order required them to give twenty-eight days' notice to the Local Authority and submit plans, but there was provision made for emergencies. On November 10 the company opened up the roadway at the junction of St. Martin's-lane and Garrick-street, and although at first the work done was in the nature of repairs, it developed into the construction of a new distributing-box, having more than twice the superficial area of the old one. The consequence of this was that for nearly a fortnight there was only room for one line of traffic in Garrick-street. No intimation that the work was about to be done had been given to the council, but on November 11 what was called an emergency notice was sent. This was not the first time the Company had disregarded the restrictions placed upon its powers, and the council considered that the matter was one of great importance, both from the point of view of the convenience of the public and having regard to the necessity for protecting the sewers.

For the defence it was proved that the work was undertaken in consequence of complaints of low pressure, and it was contended that it came within the exception of "repairs, renewals, or amendments of existing works," and further, that it was a matter of emergency.

Mr. Marsham decided to convict, and imposed a penalty of 40s., with 2*l.* 2s. costs, but on the application of Mr. R. O. B. Lane, jun., who appeared for the Company, he agreed to state a case.

SUSSEX DRAINAGE DISPUTE.

THE hearing of the case of the Mayor, &c., of Hove *v.* the Brighton Intercepting and Outfall Sewers Board concluded before the Court of Appeal composed of the Master of the Rolls and Lords Justices Romer and Cozens-Hardy, on the 6th inst., on the appeal of the plaintiffs from a judgment of Mr. Justice Kekewich in the Chancery Division, giving judgment for the defendants and dismissing the action with costs. The case was reported in the issue of the *Builder* for July 19, 1902.

The question raised by this case was whether the plaintiffs were entitled to discharge into the defendants' intercepting sewers all the sewage of the Borough of Hove, including the sewage of that part of the borough which was within the parish of Aldrington. Before 1870 there were in the parish of Hove two separate local bodies, the Brunswick-square and Terrace Commissioners and the West Hove Commissioners, and the drainage of Brighton was governed by the Corporation of Brighton. Up to that time the whole of the drainage of the district had gone directly into the sea, and to remedy the objectionable state of things thereby created along the sea front, the Brighton Intercepting Sewers Board was constituted, under an Act of 1870 to construct an intercepting sewer along the sea front of Hove and Brighton so as to carry away the sewage beyond Rottingdean and discharge it into the sea at a place called Portobello. In 1873 the parish of Hove was constituted one Urban District, and the reason the present action was brought was that since that time there had been added to the parish of Hove the parish of Aldrington. The plaintiffs claimed that Aldrington, as part of the district of Hove, was absolutely entitled as of right to drain into the intercepting sewers belonging to the defendant Board, or, in the alternative, that the plaintiffs had the right to insist, under Section 36 of the Act of 1870, upon the admission of such drainage on payment of compensation to the defendant Board. Mr. Justice Kekewich decided both points against the plaintiffs' contention. Hence their present appeal.

Mr. Macmorran, K.C., and Mr. R. J. Parker appeared for the appellants, and Mr. Cripps, K.C., Mr. Boxall, K.C., and Mr. Manby, for the respondents.

At the conclusion of the arguments of counsel the Master of the Rolls in giving judgment said the question which arose on this appeal was whether the district which was now the Hove District was, as such, entitled to pass its sewage into the intercepting sewers which had been carried along the sea-front at Brighton and the adjacent districts. That right was contested by the defendant Board, which said that the intercepting sewers were intended for certain wholly different districts, whereas the right contended for on behalf of the Hove district was never contemplated. His lordship, having dealt with the Sections of the Acts of Parliament applying to the case, and the orders of the County Council of East and West Sussex by which the parish of Aldrington was included in the district of the Hove Corporation (which was a member of the Sewers Board under the Sewers Act of 1870), said that in his opinion the case fell within Section 91 of that Act, and plaintiffs were the proper parties to put in motion the machinery of that Act. For these reasons he thought that the judgment of Mr. Justice Kekewich could not be supported, and that the appeal must be allowed.

Lord Justice Romer concurred. He thought the defendants' plea that their sewers were incapable of admitting the sewage of Aldrington as at present constructed was no answer to the plaintiffs' claim. He thought the plaintiffs were entitled to a declaration of their right, and also to apply for an injunction, though, if necessary, time would be given to the defendants to carry out such works as might be required to give effect to the plaintiffs' right.

Lord Justice Cozens-Hardy also concurred, and the Court made a declaration in the terms mentioned by Lord Justice Romer, giving the plaintiffs liberty to apply generally as to an injunction or otherwise.

The appeal was accordingly allowed with costs.

A CASE AFFECTING PROPERTY OWNERS.

AT Southwark Police-court the owners of Ponsonby-buildings (The Metropolitan Industrial Dwellings Co., Ltd., of Connaught-mansions, Victoria-street, S.W.) were summoned before Mr. Cecil Chapman by the Southwark Borough Council. Altogether, there were thirty-three sommonses, each relating to a different tenement, the offence alleged being the construction or reconstruction of lavatories (connected with others) without an anti-siphonage pipe, contrary to the London County Council's by-laws. Mr. F. Dodd was for the Borough Council, and Mr. Danckwertz, K.C., defended. Mr. Dodd said the facts were extremely simple. Ponsonby-buildings consisted of three, two, and one room tenements, and in each block there were lavatories connected with one soil pipe. Some of the water-closets had been reconstructed without the anti-siphonage pipe, which, according to By-law 7 of the London County Council's by-laws was necessary. Dr. George Millson, Medical Officer of Health to Southwark, gave formal evidence of the work being done and the anti-siphonage pipes being omitted. Cross-examined, he said it was quite true the Borough Council summoned the defendants last year with respect to some drainage matter, and the case was dismissed, with costs allowed to the company. Mr. Long, Chief Sanitary Inspector, said the case referred to was heard by Mr. Paul Taylor, who, after evidence had been given on behalf of the defendants to the effect that no nuisance existed, dismissed the summonses. Later, however, the drains were uncovered and were found to be in such a bad condition that the company reconstructed the whole of them. Consequently, the action of the Borough Council in issuing that summons was justified. It was in the course of the reconstruction of the drains that the defendants had offended against this by-law. Mr. Danckwertz, K.C., said the points relied on for the defence were that this was not reconstruction of water-closets, but simply the replacing of some of the apparatus; that the London County Council had no power under Section 202 of the Metropolis Management Act, 1855, to make by-laws relating to water-closets, such section referring to pipes, drains, and apparatus in connexion with sewers; and, further, that the By-law 17 was unreasonable, because in this case the system of drainage was such that siphonage was absolutely impossible. Mr. J. Tryon, member of a firm of solicitors and Chairman of the Metropolitan Industrial Dwellings Co., Ltd., said the company was incorporated in 1886; it had a capital of 200,000*l.*, and possessed property valued at a quarter of a million. Besides the buildings in Southwark they had similar property at Hammersmith, Chelsea, Stepney, Lambeth, and Westminster. Except in Southwark, no question had been raised with regard to their property. Ponsonby-buildings were erected in 1887, and the drainage carried out in accordance with a plan by Mr. Ernest Turner, who was a well-known authority on sanitary matters. Wherever any question was raised the company always had the opinion of Dr. Corfield or Dr. Wynter Blyth. If anti-siphonage pipes were compulsory for these buildings the cost of fixing them would be 5,000*l.* There was a summons at this Court in 1897 against the company, when Dr. Corfield gave evidence that, having regard to the size of the soil pipes, siphonage was absolutely impossible. No order was made by Mr. Slade, the presiding magistrate. In recently reconstructing the drains some of the pans and traps were broken, and these were replaced with new ones. It would be better to spend the money in housing people than to throw it away on anti-siphonage pipes which were unnecessary. Mr. Arthur Moore, secretary of the Improved Industrial Dwellings Co., who housed 5,597 families, said the system of drainage in their buildings was similar to that adopted by the defendant company. He had carried out experiments, and found that siphonage was impossible. If anti-siphonage pipes were compulsory, his company would be put to a cost of 25,000*l.* Evidence was also given by Dr. W. Blyth and Mr. Hy. Howard Humphreys that siphonage was impossible at Ponsonby Buildings. Mr. Danckwertz said the by-law in question was the produce of diseased officialism and the most ridiculous he had ever come across. Mr. Dodd stated that the Borough Council were compelled to issue these summonses because there was deliberate non-compliance with the by-law. Mr. Cecil Chapman said he would consider the case and give his judgment next week.

LEEDS BUILDING DISPUTE.

IN the Court of Appeal, composed of Lords Justices Vaughan-Williams, Stirling, and Mathews, on the 7th inst., Mr. George Lawrance said he had an application to make of an urgent character in the case of Sharp *v.* Sharp. He said his client, Mr. Sharp, was the owner of considerable property in Leeds, and among the houses he owned was the Harrisons Arms Hotel. The defendant had pulled down an old house on the other side of the road which had originally consisted of two stories, rising 18 ft. from the pavement, and was now erecting on the site a new building, which the plaintiff had reason to believe was intended to be 32 ft. high. If the proposed plans of the new building in course of erection by the defendant were carried out, the result would be a serious loss of light to the smoking-room in the Harrison Arms Hotel and a large room over it known as the lodge-room, where masonic meetings and similar gatherings were held, the loss in one case amounting to 15½ deg. of light, and in the other to 14 deg. Under these circumstances, the plaintiff decided that he must bring an action in order, at any price, to get an injunction restraining the defendant from erecting the building on the site to the proposed height. When the plaintiff's solicitors' clerk went down to the defendant's business offices he was told by his son, and also by a clerk, that the defendant had gone away for a trip on the continent, and had left no address. An application was then made by the plaintiff to Mr. Justice Buckley at chambers, who declined to interfere. Meanwhile the defendant's building was going up fast, and already had got up to 24 ft. above the roadway. The defendant appeared to be his own builder, and in the urgent circumstances of the case the learned counsel pressed their lordships to allow him to serve the writ on the defendant by leaving a copy of the writ at his offices and also at his residence in lieu of personal service, and also to grant an interim injunction restraining further building till the trial.

Lord Justice Stirling suggested that Mr. Justice Buckley should be asked to deal with the matter.

After some discussion their lordships directed that the writ should be served in the manner asked and granted an interim injunction till the 11th inst., on which day it was arranged that the learned counsel should make an application to Mr. Justice Buckley.

Accordingly Mr. LAWRANCE mentioned the matter to Mr. Justice Buckley in the Chancery Division on the 11th inst. and said it had been arranged that the interim injunction granted by the Court of Appeal should be extended over the 20th inst.

His lordship granted the application.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

3,596 of 1902.—J. C. MOOR: *Windows.*

This consists essentially in removing the lower part of the parting and inside beadings, and providing substitute parts therefor, which substitute parts are attached to a plate slidable in and out over the face of the pulley, stile, or fixed frame.

5,819 of 1902.—J. HOLT and C. HOLT.—*Electric and Other Power Hoists and Cranes.*

This consists in the combination with a pulley, which is operated by the stopping and starting end rope, or the like, of a partially-toothed wheel turning with said pulley, a second toothed wheel gearing with and locked by the first wheel, and arranged to be turned by the same only after the first wheel has been turned through a certain angle in either directions, a rack gearing with the second wheel and with a toothed pinion on the switch shaft by which the electric supply of the motor of the hoist or crane is controlled, said parts being so arranged that when the said pulley is in the position in which the cage or load is stationary, the pulley has to be turned from its position through a considerable angle at either side before operating the contact arm of the switch to cause the same to drive the electric motor in the one or the other direction.

7,790 of 1902.—J. SHIELDS: *Sofas, Couches, and Such-like Articles.*

This consists in the combination of a duplicate seat or cushion frame (having a back rest immovably fixed upon it) united to the lower frame of the sofa at the front with hinges, also pegs, and sockets for them, and one or more lockfast lids for closing and securing cavities contained in the permanent frame.

8,289 of 1902.—O. HOCKING: *An Edging or Veneering Cramp.*

An iron or other metal frame which drops over the edges of the wood, the inner face of one side being roughened, the other face having a roughened hinge and drop piece which falls against the wood and presses same to the roughened side of frame forming the grip, the pressure being put upon the veneer or other edging by a thumb-screw.

11,444 of 1902.—P. J. RAMM and F. BEHRENDT: *Water Tap or Valve and Operating Device therefor.*

A water delivery tap or valve for domestic service, comprising a main body or vessel connected with the service-pipe and covered at the top with a capping-piece containing an upwardly closing valve adapted to be pressed by a pivoted lever for delivering water through a lateral outlet.

11,644 of 1902.—J. KEITH and G. KEITH: *Lighting Device for Incandescent Gas Burners.*

A lighting device for incandescent gas burners, consisting in the combination with a burner supply-pipe of a bye-pass, the tap having orifices adapted to open the supply-pipe to the burner, and, on further turning, to the bye-pass also, a cross lever operating said tap, a pulley at the other end of said lever, a spring acting on said lever to turn the tap to "full on" position, a wire spring at one end of said lever, a pilot lighting tube connected with the bye-pass and having a helical row of jet orifices, a screw for regulating the size of these orifices, a wire spring in electric circuit fixed near the pilot tube and adapted to make and break contact with the spring at the end of the lever and, by means of a spark, to ignite the jet in the lowest orifice of the pilot tube when the tap is turned against spring pressure to be opened to the bye-pass as well as the burner.

23,611 of 1902.—W. ECCLES: *Sliding Windows.*

An appliance, which can be fixed to any existing sashes, which consists of iron tubes fixed in place of present staff and parting beads, revolving on pins at top and bottom, forming a hinge upon which the sashes open into the room. A slight groove is formed in the frame into which the tubes fit, to exclude all draught when the sashes are closed. A slot is cut in the tubes. On the sashes are fixed plates with studs, which fit into the said slots in the tubes, allowing of the sashes sliding up and down in the usual manner when closed. When open, the studs secure the sashes from falling. On opposite sides an iron safeguard is fixed in the face of the frame for securing the weights to allow of the cord being detached when it is desired to open the sashes for the purpose of cleaning, painting, and the like.

28,276 of 1902.—D. W. DINNEEN and C. L. COOK: *Three-way Valves for Faucets.*

This consists of a valve-casing having two pipes communicating therewith at one side thereof, a discharge spout at the other side, and a valve placed in said casing and provided with a central longitudinal chamber, one side of the valve being provided with a port or passage adapted to communicate with either or both of said pipes, and the other side being provided with a port or passage adapted to communicate with the discharge spout.

28,348 of 1902.—S. DEARDS: *Roof Glazing.*

A system of dry glazing, consisting essentially of a main bar or core, the end or ends of which are slotted to fit over or on to the purpins which support the bar, and over which bar is fitted or placed a covering or glass, supporting said covering bar, having a channel along each side to carry moisture, and a lead cap which holds the glass in position, said lead cap being fixed by pressing it at intervals into holes formed in the covering bar and the main bar.

3,051 of 1902.—F. H. BRUCE: *Treatment of Wood for the Purpose of Rendering the same Fireproof.*

A process of treating wood for the purpose of rendering it uninflammable or fire-resisting, and whereby the wood is also consolidated and strengthened, which process consists in subjecting the wood to a high degree of hydraulic pressure in a saline solution, such as of common salt, silicate of soda, or alum.

3,401 of 1902.—H. DANZER: *Bitumen and Asphalt Cauldrons.*

A bitumen or asphalt cauldron consisting of a central flue through which the hot gases from the furnace are caused to pass, rotary kneading or mixing devices concentric with the said flue and contained between the flue and the shell of the cauldron, and means for effecting the rotation of the kneading or mixing devices.

3,555 of 1902.—B. BUDD: *Production of Concrete, Artificial or Manufactured Stone, Plaster, and Similar Substances used for Building, for Paving, and for other Purposes.*

The production of concrete, plaster, and such like, by the use of magnesia, silicate of soda, and red oxide of iron.

3,639 of 1902.—C. ALLENOU: *Safety Apparatus, Working Automatically in Case of Fire.*

This consists in the combination with a tank for the storage of inflammable liquid, and a discharge pipe leading from the bottom thereof, or a diaphragm arranged across, and normally closing, said discharge pipe. A puncture device supported above said diaphragm by a fusible joint, and means connected with said puncture device for automatically closing the discharge pipe after the liquid has been discharged from the tank.

3,669 of 1902.—P. BROWN, JR.: *Winch Tackle and Bucket for Clearing Sewers.*

An apparatus consists of a substantially conical or bell-shaped, and bar-protected bucket. The mouth of the bucket is provided with two half lids mounted on a hinge across the centre, and opened and closed by the tackle when lowering the bucket for use or hauling up when filled.

9,747 of 1902.—M. J. ADAMS: *Liquid Distributing Apparatus and Fittings Connected Therewith.*

This consists in the use of a liquid container and a distributor apparatus wholly or partially buoyant therein, the two being combined for the purpose of delivering liquid to a filter. It also consists in the use of floating apparatus which shall revolve to distribute liquid in combination with the liquid container in which it floats. It further consists in the use of a continuous circular liquid channel or container in combination with apparatus buoyant thereon for the purpose of a liquid distributor.

20,150 of 1902.—E. SCHWANENBERG: *Process for the Manufacture of Artificial Stone, Particularly Lithographic Stone.*

A process for the manufacture of artificial stone, particularly lithographic stone, consisting in pressing a mixture of pulverised burnt lime and carbonate of lime slaked to hydrate of lime with or without mineral-filling material, and treating the mouldings or stones with carbonic acid and air alternately.

24,024 of 1902.—S. W. LUIRWIELER: *Pumps for Raising and Distributing Water.*

The mechanism for driving reciprocating pumps and the like, consisting of cams, each cam having two driving surfaces, and the cam frames, each cam frame having an upper and a lower anti-friction roller, with the upper of which rollers one of the driving surfaces of the cam is in continuous contact, and with the lower of which anti-friction roller the other driving surface of the cam makes and maintains contact during the descending or return stroke of the pump only.

24,819 of 1902.—W. E. HEYS (F. B. GILBRETH): *Apparatus for Supplying Cement to Concrete Mixers.*

This consists of a settling chamber in combination with a flap door and air outlets.

25,110 of 1902.—M. J. ADAMS: *Flushing Apparatus for Closets and Other Purposes.*

This consists in the use of a flushing cistern which shall receive the repeated discharges from a smaller supply cistern.

28,265 of 1902.—J. G. F. LUND: *Walls.*

A wall of artificial stone, or the like, characterised by the arrangement that each stone possesses a tongue on the one side, and is provided on the other side parallel to the tongue with the corresponding groove, and stones are so built in horizontal rows between the side supports that in each row a continuously consecutive horizontal tongue is formed, which engages in the continuous groove of the row of stones above it, and the adjacent surfaces of the stones are doubly sloped so that each layer acts as an arch against vertical pressure, and, at the same time, alternately as an arch against horizontal pressure from both sides alternately; that, moreover, the adjacent surfaces of the stone in two courses lying one upon another are alternated against one another, so that the alternate bonding is obtained in the vertical direction, whereby the wall operates as an elastic arch against horizontal pressure, and the tongues of each row of stones engaged with the grooves of the following course, without intermediate material and in firm connection therewith.

28,709 of 1902.—E. S. BUCKLAND: *Chemical Fire Extinguisher.*

This consists in the combination of a tank adapted to contain alkali, and provided with an opening in the upper end thereof, a cap removably fitted over the said opening and having a depending cage, a horizontally disposed locking clasp comprising a hinged section, an acid bottle with an upwardly projecting closed neck adapted to extend through the clasp, and a plunger vertically movable through the cap and provided with a lower bridge having opposite members spanning diametrically opposite portions of the neck to crush the latter and the body of the bottle below.

498 of 1903.—G. M. DAVIDSON: *Water Purifiers.*

This consists in the combination of a chemical-feed tank, stirring mechanism movably mounted therein, pump mechanism secured thereto, a water-supply pipe arranged to receive the chemical supply as it passes from the pumps on the chemical feed tank, and a tilting vessel arranged to receive the discharge of the mixed chemical and water supply to operate the same by and during its movements.

28,625 of 1902.—A. W. ONSLOW: *Burners for High Pressure Gas Lighting.*

A burner for high pressure gas lighting, comprising a body having at its lower end a gas inlet nozzle and an adjustable air inlet, and a head or cap which is detachably fitted in a gastight manner, the said head being provided with a gauze cap and with a distributor or mixer.

7,550 of 1902.—C. MARSON: *Material for Building Construction.*

This consists of material of a fibrous character—woven or otherwise, such as canvas, asbestos, and the like—and cement, the latter preferably composed of ground calcined magnesite and chloride of magnesia formed into slabs or sheets.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

MEETINGS.

FRIDAY, MARCH 13.

Institution of Civil Engineers (Students' Meeting).—Mr. A. R. Langton on "Reconstruction of Midland Railway Bridge, No. 27, over the River Trent." 8 p.m.

SATURDAY, MARCH 14.

Royal Institution. — Rt. Hon. Lord Rayleigh on "Light; its Origin and Nature." III. 3 p.m.

Edinburgh Architectural Association.—Visit to Colinton Mains' Hospital.

Junior Institution of Engineers.—Annual conversazione at the Westminster Palace Hotel, Victoria-street, Westminster. 7 to 11.30 p.m.

MONDAY, MARCH 16.

Royal Institute of British Architects.—Mr. Charles Hadfield on "Westminster Cathedral," with lantern illustrations. 8 p.m.

Liverpool Architectural Society.—Mr. Laurence Hobson on "Ancient Churches of Wirral." Limelight views. 6 p.m.

Society of Arts (Cantor Lectures). — Prof. J. A. Fleming, M.A., D.Sc., F.R.S., on "Hertzian Wave Telegraphy in Theory and Practice."—I. 8 p.m.

Devon and Exeter Architectural Society.—Paper by Mr. Harbottle Reed, entitled "Some Architectural Jottings in Switzerland," with sketches and photographs. 7 p.m.

TUESDAY, MARCH 17.

Royal Institution.—Sir Robert Ball, M.A., F.R.S., on "Great Problems in Astronomy."—I. 3 p.m.

Society of Arts (Applied Art Section).—Miss Hannah Falcke on "Artistic Fans." 4.30 p.m.

Glasgow Architectural Association.—Sir J. Stirling Maxwell, Bart., on "Contemporary Architecture from a Layman's Point of View." 8 p.m.

Institution of Civil Engineers.—(*A*) Papers to be further discussed:—1. "Recent Irrigation in the Punjab," by Mr. Sidney Preston. 2. "The Irrigation Weir Across the Bhadar River, Kathiawar," by Mr. John J. B. Benson. (*B*, time permitting) paper on "The Protection Works of the Kaiser-i-Hind Bridge over the River Sutlej, near Ferozepur," by Mr. Amyas Morse. 8 p.m.

WEDNESDAY, MARCH 18.

Architectural Association Camera and Cycling Club.—Mr. C. Churchill, F.R.P.S., on "Ireland," illustrated with lantern slides. 7.30 p.m.

Institute of Builders.—Special Council meeting, 3.30 p.m. Annual general meeting. 4 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

Edinburgh Architectural Association.—Mr. W. Davidson on "Church Decoration." Limelight views. 8 p.m.

Institution of Civil Engineers.—Students' Visit to the Generating Station of the Central Electric Supply Co., Ltd., Lodge-place, Grove-road, N.W. Assemble at the works. 2.30 p.m.

THURSDAY, MARCH 19.

Carpenters' Hall, London-wall (Free Lectures on Matters Connected with Building).—Mr. Maurice Fitzmaurice, C.M.G., Engineer to the L.C.C., on "Nile Dam, Assouan and Egyptian Irrigation." 8 p.m.

London Master Builders' Association.—Finance Committee. 3 p.m. Council meeting. 4 p.m.

Architectural Association of Ireland.—Demonstration at 4 p.m. at Messrs. G. F. Keatinge & Sons' Works, 42, Grafton-street, Dublin; and at 5 p.m. at works of Messrs. Campell & Co.

FRIDAY, MARCH 20.

Architectural Association.—Mr. W. H. White on "Ancient and Modern Town Houses." 7.30 p.m.

Institution of Mechanical Engineers.—Mr. J. Rowan on "A Premium System Applied to Engineering Workshops." 8 p.m.

Birmingham Architectural Association.—Mr. Harold Baker on "A Sketch of the History of English Architecture."

SATURDAY MARCH 21.

Royal Institution.—Right Hon. Lord Rayleigh on "Light: its Origin and Nature." IV. 3 p.m.

Architectural Association.—Fourth Spring Visit.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

February 24.—By STEPHENSON & ALEXANDER (at Cardiff).

Cardiff, Glamorgan.—15, 17, and 19, Castle-st. (S.), u.t. 50 yrs., g.r. 4*l.* 2s., y.r. 80*l.* £1,310

February 26.—By WYATT & SON (at Worthing).

Findon, Sussex.—1 to 5, Hermit-ter., f., y.r. 39*l.*.. 610
Cross-lane, freehold house, y.r. 20*l.*..... 400
Cross-lane, three freehold cottages and shops, y.r. 18*l.* 320
Cross-lane, freehold meadow plot, 0a. 2r. 22p. 220
Cross-lane, freehold meadow, 2a. 2r. 22p. 410
Nepcote-lane, freehold house and two cottages, y.r. 32*l.* 10s. 580
Findon Hill, seven freehold cottages, y.r. 39*l.*.. 375
Findon Hill, Mill House, f., y.r. 12*l.* 225
Findon Hill, enclosure of pasture, 3a. 0r. 21p., f. 105

February 27.—By HICKMAN & SON (at Welshpool).

Llanfair, Montgomery.—Bryn Glas Hall Estate, 92 a., f..... 1,200

February 28.—By STEPHENSON & ALEXANDER (at Cardiff).

Rumney, Mon.—Enclosure of pasture, 7 a. 3 r. 4 p., f., y.r. 20*l.*..... 680

March 2.—By BALCH & BALCH.

Crouch Hill.—2 and 3, The Grove, u.t. 91 yrs., g.r. 14*l.* 14s., y.r. 74*l.* 740

By FURBER, PRICE, & FURBER.

Lee.—22, Burnt Ash Hill, u.t. 64 yrs., g.r. 12*l.*, y.r. 55*l.* 350
Willesden Green.—38, Huddlestone-rd., f., y.r. 33*l.* 470

By HAMMERSLEY, KENNEDY, & Co.

Wandsworth.—12, Alford-rd., u.t. 64½ yrs., g.r. 4*l.* 4s., w.r. 31*l.* 4s. 245

By HOLCOMBE, BETTS, & WEST.

St. John's Wood.—52, Finchley-rd., u.t. 16¾ yrs., g.r. nil, e.r. 100*l.* 800

By NOKES & NOKES.

Shepherd's Bush.—17, Wharton-rd., f., y.r. 46*l.*.. 645

By PROTHEROE & MORRIS (at London Bridge).

Walmer, Kent.—Main road, &c., 57 plots of freehold building land..... 307

March 3.—By S. B. CLARK & SON.

Fulham.—1 to 4, Sydney-ter., (S.), f., y.r. 530*l.*... £1,200
Marylebone.—31, Weymouth-st. and 20, Weymouth Mews, u.t. 11½ yrs., g.r. 40*l.*, p..... 1,300

By BRODIE, TIMBS, & Co.

Hackney.—19, Lower Clapton-rd. (S.), f., y.r. 77*l.* 1,550
Stockwell.—23, Lansdowne-gdns., u.t. 39½ yrs., g.r. 7*l.*, y.r. 45*l.* 305

By ALFRED RICHARDS.

Tottenham.—199, 201, and 203, Philip-lane (S., two with stabling), f., y.r. 132*l.*..... 2,030
205 and 207, Philip-lane (s. and stabling), with land in rear, f., y.r. 91*l.*..... 1,650
209 and 211, Philip-lane (s. and Post-office), f., y.r. 74*l.* 1,320
45 to 63, 75 to 93 (odd), Summerhill-rd., f., w.r. 533*l.*..... 4,850
12, 14, and 16, Dorset-rd., f., w.r. 54*l.* 12s. 515
401 and 403, West Green-rd. (S.), f., y.r. 60*l.*.. 765

By RUTLEY, SON, & VINE.

Camden Town.—11, Crowndale-rd. (S.), u.t. 40 yrs., g.r. 7*l.* 10s., y.r. 50*l.* 540
Chalk Farm.—1, Berkeley-rd., u.t. 43½ yrs., g.r. 6*l.*, y.r. 50*l.* 535

By GEORGE LOVEITT & SONS (at Coventry).

Coventry, Warwick.—16 and 17, Broadgate (S.), area 250 yds., f., y.r. 210*l.*..... 5,300
7 to 10, Much Park-st. (S.), with tenements in rear, area 717 yds., f., y.r. 143*l.* 8s..... 2,215

By NICHOLAS, DENYER, & Co. (at Ashford).

High Halden, Kent.—Beryl Lodge Farm, 45 a. 0r. 18p., f., p. 685

By THOS. MARTIN & SON (at Exeter).

Exeter.—8 and 9, Elm Grove-rd., area 8,660 ft., f. 1,800
18, Velwell-villas, f., y.r. 70*l.* 1,160
47, High-st. (s), y.r. 115*l.* 2,302
28, East John-st., f., y.r. 11*l.* 165
106, Cowick-st., f., y.r. 12*l.* 135
76, 77, 78, Cowick-st. f., y.r. 36*l.* 460
125, 126, and 127, Cowick-st., together with ten cottages and a fruit gdn. in rear, f., w.r. 109*l.* 15s. 4d..... 1,185
Silverton, Devon.—A leasehold rent-charge of 5*l.* 12s. 115

By S. H. BAKER (at Masons' Hall Tavern).

Stratford.—Broadway, the King of Prussia p.h., a freehold rental of 50*l.*, reversion in 41½ yrs... £3,060

March 4.—By BURTON, SMITH, & Co.

Streatham.—37, Ellison-road, u.t. 76 yrs., g.r. 10*l.*, e.r. 55*l.* 525

By CURTIS & SHARP.

Plaistow.—4 to 12 (even), Brown's-rd. and 69, Milton-rd., f., w.r. 132*l.* 12s..... 900
Pelly-rd., f.g.r. 6*l.*, reversion in 41 yrs. 125

By FOSTER & CRANFIELD.

Battersea.—301, 303, and 305, Queen's-rd., u.t. 60½ yrs., g.r. 24*l.*, y.r. 120*l.*..... 860

By HAMPTON & SONS.

Regent-st.—Nos. 219 and 221; also 1, Maddox-st., l.g.r.'s 206*l.* 4s. 9d., u.t. 17¾ yrs., g.r. 66*l.* 4s. 9d. 2,120
St. John's Wood.—Henry-st., i.g.r.'s 45*l.*, u.t. 14½ yrs., g.r. nil..... 425
Clerkenwell.—Lloyd-st., i.g.r.'s 21*l.* 6s., u.t. 18½ yrs., g.r. 4*l.* 200
Cumberland-ter., i.g.r.'s 21*l.*, u.t. 18½ yrs., g.r. 4*l.* 185
Finsbury Park.—283, Seven Sisters-rd., u.t. 39½ yrs., g.r., &c., 8*l.* 10s., y.r. 70*l.* 920
Islington.—Compton-pl., &c., i.g.r.'s 50*l.*, u.t. 14½ yrs., g.r. 15*l.* 315
Clapham.—58, 60, and 62, High-st. (S), u.t. 17½ yrs., g.r. nil, y.r. 210*l.* 885

By F. W. HARRISON.

Hoxton.—39, Hoxton-st. (S.), f., y.r. 36*l.*..... 805

By F. JOLLY & Co.

Stoke Newington.—11, Fountayne-rd., ut. 74 yrs., g.r. 10*l.*, y.r. 60*l.* 770
2, Victoria-grove-west, u.t. 41 yrs., g.r. 3*l.*, y.r. 32*l.* 250
Dalston.—12, 14, 16, 17, 19, and 21, Marlborough-rd., u.t. 43 yrs., g.r. 20*l.*, y.r. 179*l.* 8s. 1,525
Forest Gate.—21 and 23, Elmhurst-rd., f., y.r. 52*l.* 570

By SALTER, REX, & Co.

Crouch End.—15, Avenue-rd., u.t. 74½ yrs., g.r. 11*l.*, e.r. 110*l.*..... 1,305
Tottenham.—320, West Green-rd., u.t. 29 yrs., g.r. 11*l.*, y.r. 50*l.* 475
324, West Green-rd., u.t. 29 yrs., g.r. 5*l.* 5s., y.r. 40*l.* 405
Wood Green.—1, 3, 9, 11, 13, and 15, Earlham-rd., u.t. 91 yrs., g.r. 30*l.* 10s., y.r. 145*l.*..... 1,630
Victoria Park.—28, 29 and 30, Bower-rd., u.t. 63 yrs., g.r. 35*l.*, w.r. 62*l.* 6s. 4d. 100

By DOUGLAS YOUNG & Co.

Stockwell.—4 to 22 (even), Northall-st., f., w.r. 221*l.* 2,380
Clapham.—53, Binfield-rd., u.t. 39 yrs., g.r. 4*l.*, e.r. 55*l.* 475
Wandsworth.—24, Chatham-rd., f., e.r. 30*l.*..... 350

By E. FERGUSSON TAYLOR.

New Barnet, Herts.—Leicester-rd., Oakdale and plot of land adjoining, f..... 1,405
Leicester-rd., Melton Cottage, f., y.r. 45*l.* 625
1 and 2, Hopetoun Villas, f., y.r. 110*l.* 1,550
Plantagenet-rd., Devonshire Villa and Gresham Cottage, f., y.r. 64*l.* 940
Bulwer-rd., Guildford and Lytton Villas, f., y.r. 48*l.*..... 605
Bulwer-rd., nine plots of building land, f..... 775
Bulwer-rd., corner plot of building land, f. 205
Plantagenet-rd., plot of building land, f. 150

By BOYTON, PEGRAM, & BUCKMASTER (at Walham Green).

Fulham.—74, New King's-rd. (S.), u.t. 87 yrs., g.r. 9*l.*, y.r. 55*l.*..... 675
44, Chesilton-rd., u.t. 77 yrs., g.r. 8*l.*, y.r. 40*l.*... 390
Putney.—45, Mexfield-rd., u.t. 77½ yrs., g.r. 5*l.* 10s., y.r. 36*l.*..... 360

By STAFFORD & ROGERS (at Newport Pagnell).

Sherington, Bucks.—Water-lane Farm, 107 a. 3 r. 26 p., f., y.r. 135*l.*..... 2,375

March 5.—By FISHER, STANHOPE, & DRAKE.

Stoke Newington.—90, Howard-rd. and range of stabling in rear, f., y.r. 50*l.* 1,075
107, Cazenove-rd., u.t. 70¾ yrs., g.r. 14*l.*, e.r. 80*l.* 950

By GLASIER & SONS.

Finsbury Park.—5, 7, and 9, Woodstock-rd., u.t. 54 yrs., g.r. 18*l.*, y.r. 112*l.* 1,140
Holloway.—20 to 28 (even), Harvist-rd., u.t. 40 yrs., g.r. 32*l.* 10s., y.r. 187*l.* 1,915
Kilburn.—45 and 47, Willesden-lane (S.), u.t. 80 yrs., g.r. 21*l.*, y.r. 110*l.* 1,095
Brixton.—Milkwood-rd., i.g.r.'s 72*l.* 10s., u.t. 63¼ yrs., g.r. 2*l.* 1,375
3, Lowden-rd. and 199 and 201, Milkwood-rd., u.t. 63 yrs., g.r. 16*l.*, y.r. 87*l.* 8s. 690
Sutton, Surrey.—Sherwood Park-rd., Thirlmere, u.t. 91 yrs., g.r. 9*l.*, y.r. 40*l.* 450
City of London.—17, Great St. Helens, freehold tithe of 18*l.* 11s. 2d. 580

By H. S. HAWLEY & Co.

Old Kent-rd.—815 to 825 (odd); also 1A to 4A, Tustin-st., u.t. 8 yrs., y.r. 339 18s., g.r. 42*l.* 10s..... 380

By W. MARTIN & Co.

Dulwich.—East Dulwich Grove, Stretton Villa, u.t. 71 yrs., g.r. 12*l.*, y.r. 50*l.* 460

By NEWBON, EDWARDS & SHEPHARD.

Holloway.—40, Devonshire-rd., u.t. 49¾ yrs., g.r. 5*l.* 5s., y.r. 34*l.* 990
Highbury.—38, Aberdeen-rd., u.t. 55 yrs., g.r. 9*l.*, e.r. 50*l.* 650
Hornsey.—Church-lane, Brooklands, u.t. 63¾ yrs., g.r. 21*l.*, y.r. 90*l.* 1,295
Highgate.—90, Cromwell-avenue, u.t. 77¾ yrs., g.r. 10*l.* 10s., e.r. 70*l.* 1,055
Caledonian-rd.—Nos. 397, 405, 407 and 411 (S.), u.t. 44 yrs., g.r. 18*l.*, y.r. 202*l.* 10s..... 230
Hampstead.—King's College-rd., the Prince Consort p.h., i.g.r. of 60*l.*, u.t. 49½ yrs., g.r. 2*l.* 1,055
Holloway.—Fulbrook-rd., i.g.r.'s 12*l.*, u.t. 53½ yrs., g.r. 2s. 230

By RAMSAY, WAINWRIGHT, & Co.

Finsbury Park.—7, Digby-rd., u.t. 73 yrs., g.r. 7*l.*, e.r. 50*l.*..... 430
11, Charteris-rd., u.t. 61 yrs., g.r. 6*l.*, y.r. 36*l.*.. 330

By RANDALL, COX, & BAKER.

Walthamstow.—117, Wood-st. (S), u.t. 75 yrs., g.r. 3*l.* 10s., y.r. 35*l.*..... 710
Stratford.—Major-rd., f.g.r. 15*l.*, reversion in 44 yrs..... 340

By STIMSON & SONS.

Hampstead.—13 and 14, Willow-rd., f., y.r. 132*l.*.. £1,710
Dulwich.—383, 385, and 387, Lordship-lane, f., w.r. 62*l.* 8s..... 1,220
391, 393, and 395, Lordship-lane (S.), f., y.r. 123*l.* 2,410
New Charlton, Kent.—Fairthorn-rd., &c., f.g.r.'s 7*l.* 2s., reversion in 68 yrs. 218
Gurdon-rd, Three Pedpercorn g.r.'s reversion in 68 yrs. 140
Battersea.—16 and 17, Parkham-st., u.t. 56 yrs., g.r. 9*l.*, w.r. 31*l.* 4s. 435
25, Castle-st., u.t. 64 yrs., g.r. 4*l.*, w.r. 31*l.* 4s. 245
55, Lavender-rd., u.t. 33½ yrs., g.r. 6*l.* 10s., w.r. 31*l.* 4s. 175
49 to 55 (odd), Hibbert-st., u.t. 59½ yrs., g.r. 10*l.* 10s., w.r. 67*l.* 12s..... 465
Wandsworth.—80, Barmouth-rd., u.t. 87 yrs., g.r. 6*l.* 10s., w.r. 40*l.* 6s..... 295
7, Killarney-rd., u.t. 90 yrs., g.r. 7*l.* 10s.. w.r. 39*l.*..... 295
Kennington.—65, Lower Kennington-ln., c., y.r. 40*l.* 16s. 325
23, Fairford-gr., u.t. 28 yrs., g.r. 6*l.* 10s. for first 12 years and 8*l.* 10s. for remainder of term 240

March 6.—By BAXTER, PAYNE, & LEPPER.

Bromley, Kent,—56, Plaistow-in., f., y.r. 85*l.*.... 1,510
Shortlands, Kent.—Park Hill-rd., Heronden and 1¼ a., f. p. 2,500

By G. ERNEST CLARKE.

Walthamstow.—55, Elmsdale-rd., f., e.r. 40*l.* 525
Chingford.—1, Kintyre, f., y.r. 30*l.* 360

By HENRY H. COLLIER.

Norwood.—22, Palace-sq., f., y.r. 36*l.* 450

Contractions used in these Lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beer-house; p.h. for public-house; o. for offices; s. for shops.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.		
Hard Stocks	1 14 0	per 1,000	alongside, in river.
Rough Stocks and Grizzles.....	1 11 0	,,	,, ,,
Facing Stocks....	2 12 0	,,	,, ,,
Shippers	2 5 0	,,	,, ,,
Flettons	1 7 6	,,	at railway depôt
Red Wire Cuts ..	1 12 0	,,	,, ,,
Best Fareham Red	3 12 0	,,	,, ,,
Best Red Pressed Ruabon Facing	5 0 0	,,	,, ,,
Best Blue Pressed Staffordshire ..	4 5 0	,,	,, ,,
Do. Bullnose	4 11 0	,,	,, ,,
Best Stourbridge Fire Bricks	4 8 0	,,	,, ,,
GLAZED BRICKS.			
Best White and Ivory Glazed Stretchers.....	13 0 0	,,	,, ,,
Headers	12 0 0	,,	,, ,,
Quoins, Bullnose, and Flats.....	17 0 0	,,	,, ,,
Double Stretchers	19 0 0	,,	,, ,,
Double Headers..	16 0 0	,,	,, ,,
One Side and two Ends.....	29 0 0	,,	,, ,,
Two Sides and one End	20 0 0	,,	,, ,,
Splays, Chamfered, Squints	20 0 0	,,	,, ,,
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	,,	,, ,,
Quoins, Bullnose, and Flats.....	14 0 0	,,	,, ,,
Double Stretchers	15 0 0	,,	,, ,,
Double Headers..	14 0 0	,,	,, ,,
One Side and two Ends.....	25 0 0	,,	,, ,,
Two Sides and one End	15 0 0	,,	,, ,,
Splays Chamfered, Squints.....	14 0 0	,,	,, ,,
Second Quality White and Dipped Salt Glazed	2 0 0	,,	less than best.
Thames and Pit Sand	7 0	per yard, delivered.	
Thames Ballast	6 0	,,	,,
Best Portland Cement	30 0	per ton, delivered.	
Best Ground Blue Lias Lime..	21 0	,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 10s. 6d. per yard, delivered.
Stourbridge Fire-clay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s. d.		
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.	
Bath ,, ...	1 7	,,	,,
Farleigh Down Bath ..	1 8	,,	,,
Beer in blocks	1 6	,,	,,
Grinshill ,, ...	1 10	,,	,,
Brown Portland in blocks	2 2	,,	,,
Darley Dale in blocks..	2 4	,,	,,
Red Corsehill ,,	2 5	,,	,,
Closeburn Red Freestone	2 0	,,	,,
Red Mansfield ,,	2 4	,,	,,

[*See also next page.*

CONTRACTS AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., supplied by	Tenders to be delivered
*Rebuilding Bolton Hall, Leyburn, Yorks.	.....	C. Hodgson Fowler, The College, Durham	Mar. 16
Pavement with Kerb, &c., High-street	Rhymney U.D.C.	W. L. Marks, Surveyor, 61, High-street, Rhymney	Mar. 17
Road from Rhymney Station to Abertywssg	do.	do	do.
Surveyor's Materials	St. Helens (Lancs) Corporation	G. J. C. Broom, Civil Engineer, Town Hall, St. Helens	do.
Sewers, &c., Rhymney Valley	Caerphilly (Wales) U.D.C.	A. C. Harpur, Engineer, Caerphilly	do.
Foundations, Market-place	Radcliffe U.D.C.	W. L. Rothwell, Engineer, Council Offices, Radcliffe	do.
Slag Road Metal	Worksop R.D.C.	T. Hopkinson, Surveyor, 40, Bridge-street, Worksop	do.
Sewers, near Preston	Fulwood (Lancs) U.D.C.	E. H. Naylor, Surveyor, Fulwood, Preston	do.
Surveyor's Materials	Hampton (Middlesex) U.D.C.	T. H. Chambers, Surveyor, Council Offices, Hampton	do.
Road Materials, near Sheffield	Wortley R.D.C.	F. Crawshaw, Surveyor, Loxley	do.
Private Street Works (Ten Roads), Woolston, Hants	.....	T. A. Collingwood, Surveyor, Portsmouth-road, Woolston	do.
Public Street Works, Avenue and Manor Roads	.....	do.	do.
Road Works, Calverley, near Leeds	.....	G. & G. H. Crowther, Civil Engineer, 38, New-street, Huddersfield	do.
Granite (700 tons), Isle of Ely	North Witchford R.D.C.	A. W. Broker, Surveyor, Wimblington, near March	Mar. 18
Eleven Houses, Pennant-street, Ebbw Vale	Mr. T. Edwards	B. J. Francis, Architect, Abergavenny	do.
Villa, Stabling, &c., Pennant-street, Ebbw Vale	.....	do.	do.
*Two Cottages, &c.	Midsomer Norton U.D.C.	Engineer & Surveyor to the Council, Market Hall, Midsomer Norton	do.
*Cleaning and Painting Engine Sheds, &c.	Midland Railway Co.	Engineer's Offices, Derby Station	Mar. 19
House, Clover Hill, Halifax	.....	R. Berry, Architect, Commercial-street, Halifax	do.
*Water Softener, &c., at Infirmary, Highgate Hill, N.	St. Mary Islington Guardians	Jas. Enright, 47, Victoria-street, S.W.	do.
Whinstone, Granite, &c. (5,000 tons)	Rothwell (near Leeds) U.D.C.	J. T. Pears, Surveyor, Council Offices, Rothwell	Mar. 20
Macadam Stone (9,000 tons)	Hull Corporation	A. E. White, Civil Engineer, Town Hall, Hull	do.
Drainage Works, Billingshurst	Horsham (Sussex) R.D.C.	W. Vaux Graham, Civil Engineer, 5, Queen Anne's-gate, Westminster	Mar. 21
Granite and Slag	Sibsey (Lancs) R.D.C.	J. M. Simpson, Boston	do.
Granite Setts	Durham Town Council	J. S. Pegge, City Surveyor, Durham	do.
Surveyor's Materials	Burnley Corporation	G. H. Pickles, Civil Engineer, Town Hall, Burnley	do.
Assembly Rooms, Lampeter	.....	Ll. Bankes-Price, Architect, 28, High-street, Lampeter	do.
Farm Buildings, Treriffith, Moylgrove, Wales	Mr. J. M. Phillips	G. Morgan & Son, Architects, 24, King-street, Carmarthen	Mar. 22
Wrought-iron Shed, Willow-road	Wrexham Town Council	Borough Surveyor, Town Hall, Wrexham	Mar. 23
*Electric Bed Lift at Infirmary	Edmonton Union	T. E. Knightley, Architect, 106, Cannon-street, E.C.	Mar. 24
Bricks, Kerbs, &c.	Brownhill (Staffs) U.D.C.	W. B. Chancellor, Surveyor, Public Buildings, Brownhills	do.
*Roadmaking & Paving Ladysmith, Crediton, &c. Roads	Willesden District Council	Engineer to the Council, Public Offices, Dyne-road, Kilburn, N.W.	do.
*Erecting Sanitary Annexes, &c. Caterham Asylum	Metropolitan Asylums Board	Office of the Board, Embankment, E.C.	Mar. 25
*Erecting Laundry Maids' Quarters, Caterham Asylum	do.	do.	do.
*Jarrah Wood Block Paving, Eastern Fever Hospital	do.	do.	do.
Twenty-five Houses, Fleur-de-Lys, Pengam	Building Club (No. 3)	G. Kenshole, Architect, Station-road, Bargoed	do.
*Alterations to Kitchen, New Service Room, &c., Asylum	Down District Lunatic Asylum	Graeme-Watt & Tulloch, 77A, Victoria-street, Belfast	Mar. 26
Sewerage Works	Camelford (Cornwall) R.D.C.	S. W. Jenkin & Son, Engineers, Liskeard	do.
*Sewage Pumping Station, &c.	Cpn. Leicester Sewage Wks., &c., Com.	Borough Engineer, Town Hall, Leicester	do.
Well Sinking	Welwyn (Hants) R.D.C.	R. E. Middleton, Civil Engineer, 17, Victoria-street, S.W.	Mar. 28
*Rebuilding Upper Stages of Tower of Town Hall	Birkenhead Corporation	H. Hartley, Architect, 8, Harrington-street, Liverpool	do.
*Main Sewerage Works, Wyke Regis	Weymouth R.D.C.	Lemon & Blizzard, Castle-lane, Southampton	Mar. 31
*Boundary Wall and Governor House, &c.	Sheffield United Gas Light Co.	Company's Engineer, Commercial-street, Sheffield	do.
*Construction of Macadamized Roads, Sewers, &c.	The Westcotes Estates, Ltd.	Everard & Pick, 6, Millstone-lane, Leicester	do.
*New Sorting Office, Wavertree, Liverpool	Commissioners of H.M. Works, &c.	H.M. Office of Works, G.P.O. Liverpool	do.
*Iron Escape Staircases, &c., at Workhouse	Camberwell Guardians	A. E. Mullins, Architect, 48, Peckham-road, Camberwell, S.E.	April 1
*Structural Alterations and Decorative Repairs	Southwark Union	G. D. Stevenson, 13 and 14, King-street, Cheapside, E.C.	April 2
*Nurses' Home, Fire Escape Staircases	Atcham Union	Union Offices, St. John's Hill, Shrewsbury	April 3
*Ilford Bridge Reconstruction	Essex County Council	Chief Surveyor, County Offices, Chelmsford	do.
*Barking Bridge Reconstruction	do.	do.	do.
*Excavating and Levelling Site, &c., Netherne Asylum	Surrey County Council	G. T. Hine & Co., 33, Parliament-street, S.W.	April 14
Road Metal, &c.	Hemsworth (Yorks) R.D.C.	T. H. Richardson, Surveyor, Hemsworth	No date.
Boiler Shop, &c., Jack-lane, Leeds	Hunslet Engine Co., Ltd.	A. Neill & Son, Architects, 38, Park-row, Leeds	do.
Church, Yarm-lane, Stockton	.....	W. J. Morley & Son, Architects, 269, Swan-arcade, Bradford	do.
Additions to Heatherlands Schools	Kinson (Dorset) U.D. School Board	W. Andrew, Architect, Parkstone	do.
Car Depot, Queen's Gate	Burnley Corporation	G. H. Pickles, Civil Engineer, Town Hall, Burnley	do.
Three Houses, Brompton, near Northallerton	Mr. J. Bell	J. S. Walton, Architect, Northallerton	do.
Two Houses, Neath	Mr. W. M. Jones	F. B. Smith, Architect, Newport	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Building Foreman of Works	Crown Agents for the Colonies	300*l.*	Mar. 23
*Assistant to Organiser & Instructor in Manual Training	School Board for London	200*l.*	do.

Those marked with an asterisk (*) are advertised in this Number. *Contracts*, iv. vi. viii. & x. *Public Appointments*, xvi.

PRICES CURRENT (*Continued*).

STONE.

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks	2	10	per ft. cube, deld. rly. depôt.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per foot super. ,,
6 in. Rubbed two sides Ditto, Ditto	2	6	,, ,,
3 in. Sawn two sides slabs (random sizes)	0	11½	,, ,,
2 in. to 2½ in. Sawn one side slabs (random sizes)	0	7½	,, ,,
1¼ in. to 2 in. ditto, ditto	0	6	,, ,,
BEST HARL YORK—			
Scappled random blocks	3	0	per ft. cube ,,
6 in. sawn two sides, landings to sizes (under 40 ft. sup.)	2	8	per ft. super. ,,
6 in. Rubbed two sides Ditto	—		,, ,,
3 in. sawn two sides slabs (random sizes)	1	2	,, ,,
2 in. self-faced random flags	0	5	,, ,,
Hopton Wood (Hard Bed) in blocks	2	3	per ft. cube.
,, ,, ,, 6 in. sawn both sides landings	2	7	per ft. super. deld. rly. depôt.
,, ,, ,, 3 in. do.	1	2½	,, ,,

PRICES CURRENT (*Continued*).

SLATES.

in.	in.	£	s.	d.	
20×10	best blue Bangor	13	2	6	per 1000 of 1200 at ry. dep.
20×12	,, ,, ,,	13	17	6	,, ,,
20×10	best seconds ,,	12	15	0	,, ,,
20×12	,, ,, ,,	13	10	0	,, ,,
16×8	best ,,	7	0	0	,, ,,
20×10	best blue Portmadoc	12	5	0	,, ,,
16×8	best blue Portmadoc	6	0	0	,, ,,
20×10	best Eureka unfading green	15	0	0	,, ,,
20×12	,, ,,	16	10	0	,, ,,
18×10	,, ,,	11	10	0	,, ,,
16×8	,, ,,	8	7	6	,, ,,
20×10	permanent green	10	10	0	,, ,,
18×10	,, ,,	9	0	0	,, ,,
16×8	,, ,,	6	5	0	,, ,,

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1,000, at rly. depôt.
Hip and valley tiles	3	7	per doz. ,, ,,
Best Broseley tiles	50	0	per 1,000 ,, ,,
Do. Ornamental Tiles	52	6	,, ,, ,,
Hip and valley tiles	4	0	per doz. ,, ,,
Best Ruabon Red, brown or brindled Do. (Edwards)	57	6	per 1,000 ,, ,,
Do. ornamental Do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,

PRICES CURRENT (*Continued*).

TILES.

	s.	d.	
Best Red or Mottled Staffordshire Do. (Peakes)	51	9	per 1,000 at rly. depot.
Do. Ornamental Do.	54	6	,, ,, ,,
Hip tiles	4	1	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Best "Rosemary" brand plain tiles	48	0	per 1,000 ,, ,,
Do. Ornamental Do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,

WOOD.

	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15	10	0	16	10	0
Deals: best 3 by 9	14	10	0	15	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best		
Battens: seconds	0	10	0	,, ,, ,,		
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	9	10	0
2 in. by 4½ in. and 2 in. by 7 in.	8	10	0	9	10	0
Foreign Sawn Boards—						
1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	,,		

PRICES CURRENT (*Continued*).

WOOD.

	At per load of 50 ft. £ s. d.	£ s. d.
Fir timber: Best middling Danzig or Memel (average specification	4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (50 ft. average)	3 5 0	3 15 0
JOINERS WOOD.	At per standard.	
White Sea: First yellow deals, 3 in. by 11 in.	23 0 0	24 0 0
9 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
,, ,, 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 10 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
,, ,, 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals 3 in. by 11 in.	13 10 0	14 10 0
,, ,, ,, 3 in. by 9 in.	12 10 0	13 10 0
,, ,, ,, battens	9 10 0	10 10 0
Pitch-pine: deals	16 0 0	18 0 0
Under 9 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	33 0 0	upwards.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine Oddments	20 0 0	22 0 0
Kauri Pine—Planks, per ft. cube	0 3 6	0 4 6
Danzig and Stettin Oak Logs—Large, per ft. cube	0 2 6	0 3 6
Small ,, ,,	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7	0 0 8
¼ in. do. do.	0 0 6½	- - -
Dry Mahogany—Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	16 10 0	20 0 0
American Whitewood Planks—Per ft. cube	0 4 0	- - -
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 1 6
1 in. by 7 in. white, planed and shot	0 11 6	0 13 6
1 in. by 7 in. white, planed and matched	0 12 0	0 14 0
1¼ in. by 7 in. white, planed and matched	0 14 6	0 16 6
1 in. by 7 inch yellow matched and beaded or V-jointed boards	0 11 0	0 13 6
1 in. by 7 in. do. do. do.	0 14 0	0 18 0
1¼ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6-in. at 6d. to 9d. per square less than 7-in.

JOISTS, GIRDERS, &c.

	In London, or delivered. Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0	7 5 0
Compound Girders ,, ,,	8 2 6	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6	8 17 6
Flitch Plates	8 5 0	8 15 0
Cast Iron Columns and Stanchions, including ordinary patterns	7 2 6	8 5 6

METALS.

	Per ton, in London £ s. d.	£ s. d.
IRON—		
Common Bars	7 15 0	8 5 0
Staffordshire Crown Bars, good merchant quality	8 5 0	8 15 0
Staffordshire "Marked Bars"	10 10 0	- - -
Mild Steel Bars	9 0 0	9 10 0
Hoop Iron, basis price	9 5 0	9 10 0
,, ,, galvanised	16 0 0	- - -
(* And upwards, according to size and gauge.)		
Sheet Iron, Black.—		
Ordinary sizes to 20 g.	10 0 0	- - -
,, ,, to 24 g.	11 0 0	- - -
,, ,, to 26 g.	12 10 0	- - -
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes 6 ft. by 2 ft. to 3 ft. to 20 g.	12 15 0	- - -
,, ,, 22 g. and 24 g.	13 5 0	- - -
,, ,, 26 g.	14 5 0	- - -
Sheet Iron, Galvanised, flat, best quality:—		
Ordinary sizes to 20 g.	16 0 0	- - -
,, ,, 22 g. and 24 g.	16 10 0	- - -
,, ,, 26 g.	18 0 0	- - -
Galvanised Corrugated Sheets:—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	12 15 0	- - -
,, ,, 22 g. and 24 g.	13 5 0	- - -
,, ,, 26 g.	14 5 0	- - -
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12 0 0	- - -
,, ,, 22 g. and 24 g.	13 0 0	- - -
,, ,, 26 g.	14 5 0	- - -
Cut nails, 3 in. to 6 in.	9 5 0	9 15 0
(Under 3 in. usual trade extras.)		

PRICES CURRENT (*Continued*).

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3 lbs. & up.	15 5 0	- - -
Pipe in coils	15 5 0	- - -
Soil pipe	17 15 0	- - -
Compo Pipe	17 15 0	- - -
ZINC—Sheet—		
Vieille Montagne ton	25 10 0	- - -
Silesian	25 5 0	- - -
COPPER—		
Strong Sheet per lb.	0 0 10½	- - -
Thin ,,	0 0 11½	- - -
Copper nails ,,	0 0 11½	- - -
BRASS—		
Strong Sheet ,,	0 0 10	- -
Thin ,,	0 0 11	- -
TIN—English Ingots ,,	0 1 4½	- - -
SOLDER—Plumbers' ,,	0 0 6½	- - -
Tinmen's ,,	0 0 8½	- - -
Blowpipe ,,	0 0 9½	- - -

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2½d. per ft. delivered.
,, fourths	1¾d. ,, ,,
21 oz. thirds	3¼d. ,, ,,
,, fourths	2½d. ,, ,,
26 oz. thirds	4d. ,, ,,
,, fourths	3¼d. ,, ,,
32 oz. thirds	5d. ,, ,,
,, fourths	4¼d. ,, ,,
Fluted sheet, 15 oz.	3d. ,, ,,
,, 21 oz.	4d. ,, ,,
½ Hartley's Rolled Plate	1¾d. ,, ,,
⅝ ,, ,, ,,	2d. ,, ,,
½ ,, ,, ,,	2¼d. ,, ,,

OILS, &c.

	£ s. d.
Raw Linseed Oil in pipes or barrels per gallon	0 2 4
,, ,, ,, in drums ,,	0 2 8
Boiled ,, ,, in pipes or barrels ,,	0 2 6
,, ,, ,, in drums ,,	0 2 10
Turpentine, in barrels ,,	0 3 8
,, in drums ,,	0 3 10
Genuine Ground English White Lead per ton	20 10 0
Red Lead, Dry ,,	20 0 0
Best Linseed Oil Putty per cwt.	0 8 0
Stockholm Tar per barrel	1 12 0

VARNISHES, &c. Per gallon.

	£ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 6
Superfine Hard-drying Oak, for Seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERGELE (Wales).—For the erection of a nurses' home at Ashton-under-Lyne, for the Guardians of the Poor, Ashton-under-Lyne Union. Messrs. Eaton, Sons, & Cantrell, architects, Ashton-under-Lyne:—

Building.—J. Ridyard, Ashton-under-Lyne £5,530
Plumbing and Glazing.—G. H. Coop, Ashton-under-Lyne 895

COLNE.—For extensions to sewage farms, &c., for the Corporation. Mr. T. H. Hartley, Borough Surveyor, Town Hall, Colne, Lancs:—

Ward & Tetley, 149, Swan-arcade, Bradford* £3,275 13 10

DARTFORD.—For iternal iron fencing and gates at Joyce Green Hospital, Dartford, Kent, for the Metropolitan Asylums Board. Messrs. A. & C. Harston, architects, 15, Leadenhall-street, E.C.:—

Motley & Green	£3,526 16 0	S. Webb	£1,867 9 9½
Hayward & Sons, Ltd.	2,370 0 0	Hill & Smith	1,860 16 0
Wenham & Waters	2,352 0 0	Dudley Art Metal Co.	1,840 5 0
Rowell & Co.	2,199 10 0	Bain & Co.	1,798 10 10
Bayliss, Jones, & Bayliss, Ltd.	2,156 11 3	Miller & Sons	1,798 0 0
Priest & Sons, Ltd.	2,100 0 0	E. J. Raybould	1,697 10 10
Rowland Bros.	2,047 0 0	J. Elwell	1,682 7 6
Morton & Co., Ltd.	1,950 0 0	B. C. Barton	1,660 0 0
		A. E. Wood, Arabin-rd, Brockley*	1,535 10 0

DEVONPORT.—For the erection of a mortuary chapel at cemetery, North Prospect, for the Town Council. Mr. J. F. Burns, Borough Surveyor, Ker-street, Devonport:—

F. J. Stanbury, Devonport* £2,051

DIDSBURY (near Manchester).—For the erection of a private residence, for Mr. Leonard Letter. Messrs. Maxwell & Tuke, architects, 25, Brazennose-street, Manchester. Quantities by the architects:—

Evan Roberts & Co.	£2,564	Neill & Sons	£2,090
G. England	2,227	William Shaw	2,083
William Thorpe	2,195	Henry Matthews	2,076
George Macfarlane	2,172	Burgess & Galt*	1,980
Wilson & Toft	2,100		

EPSOM.—For the erection of a boiler-house, &c., at the infirmary, for the Guardians. Mr. H. D. Searles Wood, architect, 157, Wool Exchange, Coleman-street, E.C.:—

F. Pearce	£900	Cropley Bros.	£665
G. Bulford	780	Jones & Sons	664
Niel & Co.	738	Cardiner & Hazell	650
T. Vaughan	689	Foster Bros.	634
R. S. Humphris	679	C. R. Price	610
L. H. & R. Roberts	676	Roll & Taylor	594

GREAT BROUGHTON (Cumberland).—For a new infant school at Great Broughton, for the Great Broughton School Board. Messrs. W. G. Scott & Co., architects, Victoria-buildings, Workington. Quantities by architects:—

Full Tenders.

Rigley & Son	£1,212 0
H. Tinnion, Flimby*	1,062 16

Masonry Work.

L. Ferguson	£621 0	Rigley & Son	£543 0
J. Shackley	573 12	Geo. Mann	449 10
B. Hyde	552 0		

Masonry, Slating, and Plastering.

Wren & Co.	£742 18

Joinery Work.

J. Fletcher	£381 12 2	Graves & Son	£317 19 6
G. H. Chambers	370 0 0	John Steel	304 10 0
P. Robinson	367 8 0		

Slating Work.

T. Mandale	£134 5 8	E. Burrow	£119 10 10
Lythgoe & Son	119 0 0		

Plumbers' Work.

J. Birkett	£100 0 0	D. M. Walker	£66 0 0
Rook & Co.	79 13 0	Hodgson & Co.	64 15 0
W. Stewart	73 0 0	G. H. Dunbobbin	61 10 0
W. Strathern	71 3 0	J. A. Pape	59 10 0
Fisher & Co.	68 2 0	Banks & Son	55 11 0

Plastering.

Lawson & Co.	£120 11 3	J. Perrin	£107 7 0

Painting and Glazing.

J. McKay	£45 15 1	Cowen & Co.	£32 1 1
J. Gordon	34 14 6	Robinson & Co.	29 7 0
G. Davies	34 11 4	T. D. Keenliside	23 0 0

HOUNSLOW.—For erecting a masonic temple, Hounslow, for the Middlesex Masonic Temple Co., Ltd. Mr. C. Botterill, architect, 583, Fulham-road, Walham Green, S.W.:—

W. Nash	£1,602 0	Edwards & Medway	£1,390 0
M. D. Wills	1,549 15	McArthur & Co.	1,372 0
Messon & Sons	1,532 0	J. W. Brooking, Richmond*	1,328 0
T. Hiscock	1,488 0		

[Architect's estimate, £1,304.]

LITTLEHAMPTON.—For public conveniences, Littlehampton, for the Town Council. Mr. H. Howard, Surveyor, Town Offices, Littlehampton. Quantities by Mr. C. F. A. Poland, 6, John-street, Bedford-row, W.C.:—

A. Longhurst	£1,427	W. Wallis	£1,277
G. Jennings, Ltd.	1,350	Linfield & Sons, Littlehampton*	1,197
A. Burrell	1,349		
Snewill Bros.	1,323		

[See also next page.

LONDON.—For drainage and other works, First-avenue, Wilberforce-road, Cowley-place, and The Burroughs, for the Hendon Urban District Council. Mr. S. Slater Grimley, Engineer, Council Offices, Hendon, N.W.:—

	First Avenue.	Cowley Place.	Wilberforce Road.	The Burroughs.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Griffith & Co., Ltd.	848 13 10	195 0 8	689 14 6	578 1 3	2,292 10 3
Ballingback & Co.	759 7 9	278 1 0	602 18 3	644 19 6	2,285 6 0
Nowell & Co.	780 11 1	195 4 4	602 9 3	487 16 0	2,066 0 8
Joseph Meston	*688 0 4	194 13 8	543 13 9	566 2 6	1,992 10 3
Thomas Adams	720 2 0	206 4 0	572 17 0	*479 0 10	1,987 3 10
Ballard, Ltd.	659 17 10	*187 6 8	*546 10 6	521 1 6	1,954 16 6

* Recommended for Acceptance.

LONDON.—For the erection of three new blocks of buildings in extension of the workhouse, and guardians' offices at King's-road and Sydney-street, Chelsea, for the Guardians of the Poor of Chelsea. Messrs. Lansdell & Harrison, architects, 65 and 66, Basinghall-street, London, E.C. Quantities by Messrs. Northcroft, Son, & Nicholson, 0, Regent-street, S.W.:—

W. Willett	£44,202	J. Greenwood, Ltd.	£36,364
Foster & Dickson	39,986	G. Parker	36,067
Leslie & Co., Ltd.	39,008	Kingerlee & Son	36,087
Gray, Hill, & Co.	38,175	Shillitoe & Son	36,000
Johnson & Co.	37,926	Lawrence & Sons.	35,763
Godson & Sons	37,900	B. E. Nightingale	35,748
H. L. Holloway	37,000	Edwards & Medway	35,400
Pattison & Sons	36,963	W. Wallis	34,919
Kirk & Randall	36,765	A. E. Symes	33,450
Kellett & Sons, Ltd.	36,687	King & Sons	33,275
F. G. Minter	36,681	Patman & Fotheringham	33,125
Smith & Sons	36,594	C. Wall, Upcerne-road, Chelsea*	32,825
J. & M. Patrick	36,590		
C. F. Kearley	36,550		
Holloway Bros.	36,400		

LONDON.—For providing 92 tables, 180 seats, and 2 bookcases required for the furnishing of the Mill-lane lodging-house, for the London County Council:—

	Tables Each.	Seats Each.	Bookcases Each.	Total Amount of Tender.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Hammer & Co., Ltd.*	2 0 0	1 5 0	22 0	449 0
Bennett Furnishing Co.	1 19 9	1 6 0	17 10	†145 17
Wake & Dean, Ltd.	2 10 0	1 12 0	22 10	563 0
General Builders, Ltd.	2 9 9	1 19 9	23 10	633 12
Hampton & Sons, Ltd.	—	—	23 15	—

† Alternative estimate of 424*l.* 2*s.*

LONDON.—For the erection of a private residence at Oakcroft-road (the Knoll Estate), Blackheath, for Mr. Arthur E. Robinson. Mr. Leonard V. Hunt, architect, 34, Queen-street, London, E.C.:—
Kennard Bros., Lewisham, S.E.* £1,850

NEWTON ABBOT (Devon).—For additions to workhouse, for the Guardians. Mr. S. Segar, architect, Union-street, Newton Abbot. Quantities by the architect:—

W. Brenton	£3,347 0 0	F. A. A. Stacey	£2,930 0 0
L. Bearne	3,025 0 0	G. Hicks	2,895 13 0
H. Drew	2,997 0 0	M. Bridgman	2,890 0 0
Parker Bros.	2,990 0 0	F. Zealley, Newton Abbot*	2,796 0 0
Yeo & Sons	2,954 8 5		

PRESTON.—For paving, &c., Skeffington-road, for the Corporation:—
Geo. Chadwick, Preston £173 1 4

SOUTHAMPTON.—For the completion of four boreholes, Otterbourne, near Shawford, for the Corporation. Mr. W. Matthews, C.E., 18 and 19, French-street, Southampton:—

Hill & Co.	£1,100 0	W. Stone	£450 0
Henderson & Co.	1,080 0	Dunn & Booth	298 0
Mather & Platt	592 0	Potter & Co.	294 0
British-American Well Works	512 10	J. Thorn	275 10
R. D. Batchelor	511 10	Hole & Roberts	270 0
New Calyx Drill Co.	500 0	Isler & Co.	250 0
Aqueous Works, &c.	500 0	Le Grand & Sutcliffe	182 0
Timmins & Sons	470 0	Duke & Ockenden	174 10

WOKING.—For the erection of a new billiard-room at Mar House, for Mr. E. W. Price Harris. Mr. Samuel Ridgeway, C.E., Woking, architect:—

Harris & Son	£277 0 0	George Goring, Woking*	£251 11 5
Drowley & Co.	275 0 0		

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